

EXHIBIT E

7/23/2010

Illumina, Inc. v. Affymetrix, Inc.
Attorneys' Eyes Only

Mark Chee

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UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WISCONSIN

ILLUMINA, INC.,)	
Plaintiff,)	
vs.)	No. 09-cv-277
AFFYMETRIX, INC.,)	09-cv-665
Defendant.)	
_____)	

SUBJECT TO PROTECTIVE ORDER - ATTORNEYS' EYES ONLY

VIDEO DEPOSITION OF

MARK CHEE, Ph.D.

JULY 23, 2010

Reported by Veronica Thompson, CSR 6056, RPR, CRR

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<p>1 VIDEO DEPOSITION OF MARK CHEE, Ph.D.,</p> <p>2 taken at 3579 Valley Centre Drive, Suite 300, San Diego,</p> <p>3 California 92130, commencing on Friday, July 23, 2010, at</p> <p>4 9:00 a.m., before Veronica Thompson, CSR 6056.</p> <p>5 SAN DIEGO, CALIFORNIA, JULY 23, 2010, 9:00 A.M.</p> <p>6</p> <p>7 VIDEOGRAPHER: Good morning. We're on the</p> <p>8 record at 9:00 a.m. on July 23, 2010, for the videotaped</p> <p>9 deposition of Mark Chee, Volume I, in the matter of</p> <p>10 Illumina Incorporated versus Affymetrix Incorporated,</p> <p>11 Case No. 09-CV-277 consolidated with Case No. 09-CV-695.</p> <p>12 We're taking this deposition at 3579 Valley</p> <p>13 Centre Drive on the third floor in San Diego, California.</p> <p>14 My name is Michael Henry, videographer with</p> <p>15 Digital Evidence Group, located at 1299 Pennsylvania</p> <p>16 Avenue Northwest, Suite 1130E, in Washington, D.C.</p> <p>17 The court reporter today is Veronica Thompson</p> <p>18 in association with Digital Evidence Group.</p> <p>19 Would counsel and all present please identify</p> <p>20 yourselves for the record beginning with the witness.</p> <p>21 THE WITNESS: Mark Chee.</p> <p>22 MR. COSTAKOS: Jeff Costakos, Foley & Lardner</p> <p style="text-align: right;">Page 6</p>	<p>1 Q. In the San Diego area?</p> <p>2 A. San Diego, yeah.</p> <p>3 Q. And by whom are you currently employed?</p> <p>4 A. Prognosys Biosciences.</p> <p>5 Q. And for how long have you been employed by that</p> <p>6 company?</p> <p>7 A. Gosh. I want to say about -- probably about</p> <p>8 five years, maybe a bit more.</p> <p>9 Q. Okay. And what is the business of that</p> <p>10 company?</p> <p>11 A. It's a biotech company.</p> <p>12 Q. And generally what do they do?</p> <p>13 A. We are interested in this area of personalized</p> <p>14 medicine, so we do R&D in the biotech field.</p> <p>15 Q. Okay. Prior to joining that company, by whom</p> <p>16 were you employed?</p> <p>17 A. Illumina.</p> <p>18 Q. And that takes you back to 2005 or 2004 when</p> <p>19 you were employed by Illumina?</p> <p>20 A. Roughly, yes.</p> <p>21 Q. And you were with Illumina for how long, sir?</p> <p>22 A. Let's see. From 1998, I think, 1998 through</p> <p style="text-align: right;">Page 8</p>
<p>1 on behalf of Illumina.</p> <p>2 MR. BURCH: Marcus Burch, Illumina.</p> <p>3 MR. SHULMAN: Ron Shulman from Wilson Sonsini,</p> <p>4 and I'm with -- I'm representing Affymetrix.</p> <p>5 VIDEOGRAPHER: Thank you.</p> <p>6 Would the court reporter please administer the</p> <p>7 oath to the witness.</p> <p>8 MARK CHEE, Ph.D.,</p> <p>9 having been administered an oath, testified as follows:</p> <p>10</p> <p>11 MR. SHULMAN: You and I are both fans of</p> <p>12 Richard Dawkins, I take it.</p> <p>13 THE WITNESS: It seems so.</p> <p>14</p> <p>15 EXAMINATION</p> <p>16 BY MR. SHULMAN:</p> <p>17 Q. Would you state your full name and residence</p> <p>18 address.</p> <p>19 A. Mark Chee, [REDACTED]</p> <p>20 [REDACTED]</p> <p>21 Q. Where is [REDACTED]</p> <p>22 A. It's just north of here.</p> <p style="text-align: right;">Page 7</p>	<p>1 to -- I lose track exactly because, you know, I</p> <p>2 transitioned out of Illumina, and I was still on their</p> <p>3 scientific advisory board for a while, but I want to say</p> <p>4 about 2004, 2005.</p> <p>5 Q. Okay.</p> <p>6 A. They can tell you more accurately than I can.</p> <p>7 Q. All right. And before joining Illumina, by</p> <p>8 whom were you employed?</p> <p>9 A. For a -- for some period of time, I was, I</p> <p>10 would say, self-employed. I was busy trying to start a</p> <p>11 biotech company. And then prior to that, I was employed</p> <p>12 by Affymetrix.</p> <p>13 Q. Okay. Did you have a company known as</p> <p>14 nGenetics?</p> <p>15 A. I did.</p> <p>16 Q. And was that the company that you were</p> <p>17 associated with after leaving Affymetrix but before</p> <p>18 joining Illumina?</p> <p>19 A. That's right.</p> <p>20 Q. And before joining Affymetrix, were you</p> <p>21 employed?</p> <p>22 A. Let's see. Before Affymetrix, I was at -- a</p> <p style="text-align: right;">Page 9</p>

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1 post doc at the -- at Stanford and also at Affymax.
2 Q. Okay. And Affymax is the predecessor to
3 Affymetrix?
4 A. I'm not sure exactly the relationship, but yes,
5 Affymetrix, I think, was spun out of Affymax.
6 Q. Okay. When did you graduate from college?
7 A. You mean university? When I got my Ph.D.?
8 Q. No. Undergraduate.
9 A. Undergraduate. Now you're really testing my
10 memory. I'm not great on dates.
11 Let's see. That would be -- let's see. I
12 started in Cambridge in nine -- 1986. So I want to say
13 it must have been about 1985, finished my undergraduate.
14 Q. Okay. And where did you go undergraduate?
15 A. That was in Australia at the University of New
16 South Wales.
17 Q. And what was your area of study?
18 A. Biochemistry.
19 Q. And following your undergraduate, you went to
20 Cambridge, you said?
21 A. That's right.
22 Q. In England?

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1 A. Yes.
2 Q. And you got your Ph.D. there?
3 A. That's right.
4 Q. And that was approximately when?
5 A. I think 1986 through to about 1992, '91 maybe.
6 Q. Okay. Now, you left Illumina in approximately
7 2004 or 2005. Correct?
8 A. I -- I think so. I -- I have to go and check
9 those dates, but somewhere around there.
10 Q. Okay. And it was a transitional departure. Is
11 that correct?
12 A. Yes.
13 Q. Okay. Can you explain to us why you left
14 Illumina?
15 A. Well, it was a -- it had reached a stage where
16 it was, you know, a successful company that was -- that
17 was less driven purely by R&D, and I like creating new
18 things from scratch and, you know, getting them to a --
19 to a certain stage. And so I woke up one morning and
20 realized if I didn't go into work, everything would still
21 happen just fine without me. And at that point it seemed
22 to me to make sense to go and, you know, start something

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1 new.
2 Q. And I'm sorry. Could you remind me of the name
3 of the company that you're with again?
4 A. Prognosys Biosciences, spelled
5 P-r-o-g-n-o-s-y-s.
6 Q. Would you characterize Prognosys as a startup?
7 A. I'd say so, yes.
8 Q. Approximately how many employees at Prognosys?
9 A. Currently, I think it's about -- we have about
10 20 full-time and part-time.
11 Q. When did you first hear of or learn of John
12 Stuelpnagel?
13 A. Let's see. I -- I think I first met John --
14 and I hadn't heard of him before then --
15 Q. I'm sorry. You had not heard of him?
16 A. I had not.
17 -- at -- at Caliper. So that would have been
18 after I left Affymetrix. I'm not sure when, but I would
19 think it would have been late 1997.
20 Q. Okay. And what were the circumstances that
21 caused you to meet him?
22 A. Well, I was interested in microfluidic

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1 technology, and I was meeting with Caliper to see if
2 there might be some business arrangement whereby we could
3 make use of their microfluidic technology to develop
4 assays. And so it was in that context, a business
5 meeting at Caliper.
6 Q. And what was Mr. Stuelpnagel doing there?
7 A. Let's see. I'm -- it's so far back, I'm not
8 sure I really remember, but I think it was -- actually,
9 I'm just trying to remember for sure if I met him at
10 Caliper or if I met him beforehand. But, anyway, it was
11 in association with Caliper. I'm pretty sure it was at
12 Caliper. It's possible it was at an informal meeting
13 beforehand.
14 I believe he -- he was representing Caliper in
15 that Caliper was -- was founded -- one of the founders of
16 Caliper was Larry Bock, and John Stuelpnagel was an
17 associate of Larry's, I guess, learning the venture
18 business.
19 Q. Uh-huh.
20 A. And so I think they were just helping Caliper
21 figure out whether this discussion we were having about a
22 business deal made sense.

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<p>1 Q. Okay. Now, according to Dr. Stuelpnagel, you</p> <p>2 were hired -- formally hired as an Illumina employee in</p> <p>3 June of '98. Is that consistent with your recollection?</p> <p>4 A. Yes, it is.</p> <p>5 Q. And before you -- strike that.</p> <p>6 And Illumina was formally founded in late April</p> <p>7 of 1998 according to Dr. Stuelpnagel. Is that also</p> <p>8 consistent with your recollection?</p> <p>9 A. That's consistent. Incorporated, yeah.</p> <p>10 Q. Correct, correct.</p> <p>11 Do you recall approximately how many</p> <p>12 face-to-face meetings you had with Dr. Stuelpnagel before</p> <p>13 April of '98 when the company was formally incorporated?</p> <p>14 A. I -- I don't. Not -- not many.</p> <p>15 Q. Okay. Less than a half a dozen?</p> <p>16 A. You know, my recollection on that sort of thing</p> <p>17 is vague enough that -- that I have a sense that it was</p> <p>18 something in that range, but I could be off, so...</p> <p>19 Q. Okay. And prior to joining Illumina in June of</p> <p>20 '98, did you ever meet with David Walt?</p> <p>21 A. Yes, I did.</p> <p>22 Q. Okay. On how many occasions?</p> <p style="text-align: right;">Page 14</p>	<p>1 refresh your recollection just to pin down some of these</p> <p>2 dates.</p> <p>3 Let me have the reporter mark as Exhibit 1 a</p> <p>4 copy of a deposition transcript of yours from the</p> <p>5 Affymetrix versus Illumina case, and this testimony was</p> <p>6 taken on February 9, 2006. She'll hand you that.</p> <p>7 (Exhibit 1 was marked.)</p> <p>8 BY MR. SHULMAN:</p> <p>9 Q. If you could turn to transcript page, which is</p> <p>10 upper right corner, 285.</p> <p>11 A. I'm starting to feel this is the only way I</p> <p>12 remember any dates at all is through recurring</p> <p>13 depositions.</p> <p>14 285?</p> <p>15 Q. Correct. And down at about line 15 you were</p> <p>16 asked the following question and gave the following</p> <p>17 answer.</p> <p>18 "Did you draft this summary of your own</p> <p>19 experience?</p> <p>20 "Answer: Probably I did, yes.</p> <p>21 "Question: The -- at the second paragraph of</p> <p>22 that relevant experience it says, quote, in May 1998,</p> <p style="text-align: right;">Page 16</p>
<p>1 A. Sorry. Did you say April of '98?</p> <p>2 Q. I said --</p> <p>3 A. Prior to joining Illumina --</p> <p>4 Q. Actually, I said June.</p> <p>5 A. You said June. Oh, okay. Yes, I did. Yeah.</p> <p>6 Q. Let's try April. Prior to April --</p> <p>7 A. I don't recollect, but it was definitely before</p> <p>8 June.</p> <p>9 Q. Okay. On how many occasions did you meet with</p> <p>10 Mr. -- I'm sorry -- Dr. Walt before you joined Illumina?</p> <p>11 A. Let's see. I -- I recall one -- one meeting.</p> <p>12 I don't know if there were others, but I definitely</p> <p>13 recall one.</p> <p>14 Q. Okay. Was that in May of '98?</p> <p>15 MR. COSTAKOS: Objection. Foundation.</p> <p>16 THE WITNESS: Don't recall.</p> <p>17 BY MR. SHULMAN:</p> <p>18 Q. Where did you meet with Dr. Walt?</p> <p>19 A. At -- at his -- his office in his lab in Boston</p> <p>20 at Tufts University.</p> <p>21 Q. At Tufts.</p> <p>22 MR. SHULMAN: Okay. Let me see if I can</p> <p style="text-align: right;">Page 15</p>	<p>1 Dr. Chee spent three days in Dr. Walt's laboratory at</p> <p>2 Tufts University. Is that the first time that you</p> <p>3 visited Walt -- Dr. Walt's lab?</p> <p>4 "Answer: Yes."</p> <p>5 Does that refresh your recollection that May of</p> <p>6 '98 was the first time?</p> <p>7 MR. COSTAKOS: Objection. Form.</p> <p>8 THE WITNESS: It doesn't, actually, but if --</p> <p>9 presumably that's what I recalled then, so presumably it</p> <p>10 was accurate. I mean, I -- I -- I'm not even sure of the</p> <p>11 context here. Let me just have a quick look.</p> <p>12 ///</p> <p>13 BY MR. SHULMAN:</p> <p>14 Q. Sure. Take your time.</p> <p>15 A. So this was talking about a -- a grant</p> <p>16 application?</p> <p>17 Q. I believe so, although I don't recall the</p> <p>18 context.</p> <p>19 A. And it says "principal investigator" on this</p> <p>20 application, so I assume it's grant application.</p> <p>21 "Did you draft a summary of your own</p> <p>22 experience?"</p> <p style="text-align: right;">Page 17</p>

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<p>1 I -- I can't -- so all I can say is that if I</p> <p>2 said it then and I said yes, then it must be correct.</p> <p>3 Q. Okay. Fair enough.</p> <p>4 Were you aware of the Walt technology before</p> <p>5 you visited the Walt lab in May of 1998?</p> <p>6 MR. COSTAKOS: Objection. Form to the extent</p> <p>7 it incorporates the preamble.</p> <p>8 THE WITNESS: I'm not sure what all that meant,</p> <p>9 but --</p> <p>10 MR. COSTAKOS: But you can go ahead and answer.</p> <p>11 THE WITNESS: Oh, okay.</p> <p>12 MR. SHULMAN: Quite honestly, I'm not sure</p> <p>13 either.</p> <p>14 MR. COSTAKOS: Yeah, yeah. I guess my</p> <p>15 objection is it assumes a fact -- fact not in evidence.</p> <p>16 MR. SHULMAN: Okay. You can go ahead and</p> <p>17 answer.</p> <p>18 THE WITNESS: What was the question again?</p> <p>19 MR. SHULMAN: Yeah.</p> <p>20 BY MR. SHULMAN:</p> <p>21 Q. Were you aware of the Walt technology prior to</p> <p>22 visiting the Walt lab in May of 1998?</p> <p style="text-align: right;">Page 18</p>	<p>1 gone.</p> <p>2 Q. That's gone.</p> <p>3 A. Yeah, that's a shame.</p> <p>4 Q. But they make a good cup of coffee.</p> <p>5 And what did you know about the -- as best you</p> <p>6 can recall, what did you know about the Walt technology</p> <p>7 before you visited the Walt lab?</p> <p>8 A. Well, just as best I recall, I had a -- I think</p> <p>9 a pretty good conceptual understanding of the technology.</p> <p>10 Q. Can you describe that to me, please?</p> <p>11 A. That it was basically a -- a way of making a</p> <p>12 device with thousands or very large numbers of -- of</p> <p>13 beads that could be derivatized with molecules and that</p> <p>14 you could do assays on those molecules.</p> <p>15 I think I recall a couple of examples being</p> <p>16 shown of different assays, different types of assays</p> <p>17 being done on those beads, and that the way the beads --</p> <p>18 this collection of beads or this array of beads was</p> <p>19 formed was to take an optical fiber bundle and just etch</p> <p>20 it to a depth so that you formed a collection of wells, a</p> <p>21 little well at the end of either fiber in this monolithic</p> <p>22 bundle of fibers, and that was basically it. Optical</p> <p style="text-align: right;">Page 20</p>
<p>1 MR. COSTAKOS: Same objection.</p> <p>2 THE WITNESS: Yes, I was.</p> <p>3 BY MR. SHULMAN:</p> <p>4 Q. Okay. And how did you become aware of it?</p> <p>5 A. John Stuelpnagel -- well, my recollection is</p> <p>6 John Stuelpnagel told me about it.</p> <p>7 Q. Okay. And when, relative to May 1998, did</p> <p>8 Dr. Stuelpnagel inform you of the Walt technology?</p> <p>9 A. Ooh. I don't -- I don't recall. I recall a</p> <p>10 meeting with -- with -- with John, and I'm pretty sure</p> <p>11 Larry Bock was there as well, and it was in Palo Alto,</p> <p>12 and they just showed me basically some paper form of</p> <p>13 PowerPoint presentation.</p> <p>14 Q. Is that a meeting that was at Printers Inc. at</p> <p>15 the time?</p> <p>16 A. That's right.</p> <p>17 Q. That's over on California Avenue?</p> <p>18 A. Yes. Used to be.</p> <p>19 Q. Still there.</p> <p>20 A. It's still there?</p> <p>21 Q. Yes. I think it changed names, though.</p> <p>22 A. The book store isn't there anymore. That's</p> <p style="text-align: right;">Page 19</p>	<p>1 fiber bundle with wells, beads with reactive molecules,</p> <p>2 deposited in them. And the way you identified which bead</p> <p>3 was which was that the beads were -- were essentially</p> <p>4 dyed different colors with different fluorescent colors.</p> <p>5 Q. Okay. Can you explain to me, not that it's</p> <p>6 relevant to the case, but I'm just curious, what keeps</p> <p>7 the bead in the well?</p> <p>8 A. You know, that's a question that came up many</p> <p>9 times, and I don't think it was ever answered</p> <p>10 definitively. Not -- not -- certainly not in that early</p> <p>11 stage.</p> <p>12 Theories were electrostatic forces, Van Der</p> <p>13 Walls forces, V-a-n space D-e-r space W-a-l-l-s.</p> <p>14 Q. When did you first begin doing any work with</p> <p>15 the Walt technology?</p> <p>16 MR. COSTAKOS: Objection. Form.</p> <p>17 THE WITNESS: I guess it depends what you mean</p> <p>18 by "work."</p> <p>19 BY MR. SHULMAN:</p> <p>20 Q. Other than hearing about it, when did you first</p> <p>21 give thought to it and begin to write things down about</p> <p>22 the Walt technology?</p> <p style="text-align: right;">Page 21</p>

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1 MR. COSTAKOS: Objection. Form.
2 THE WITNESS: Well, I gave thought to it as
3 soon as I heard about it.
4 MR. SHULMAN: Fair enough.
5 BY MR. SHULMAN:
6 Q. And you heard about it at this meeting at
7 Printers Inc.?
8 A. I believe so, yes.
9 Q. Okay. And was that in 1998 or 1997?
10 A. You know, I couldn't be completely sure.
11 I'm -- I -- I wouldn't -- I would think it must have
12 been -- I'm pretty sure it was either late 1997 or -- or,
13 you know, I'm thinking first quarter of 1998, but I don't
14 recall exactly when that meeting was.
15 Q. Okay. And do you recall when you first began
16 putting your thoughts to paper about the Walt technology?
17 A. No, I don't.
18 Q. Okay. Do you have any personal records in your
19 personal possession that relate to your early days at
20 Illumina?
21 A. Personal records, no, I don't -- I don't keep a
22 diary or anything like that.

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1 Q. Or on your computer, anything like that?
2 A. No. Well, anything I had -- I think the last
3 case, I turned the entire contents of my computer over,
4 and I heard, I think, complaints -- I have the -- I have
5 the impression there were complaints from both sides
6 about the volume of material. So anything I had I turned
7 over.
8 Q. Okay. In general terms, did the Walt
9 technology that you saw in the spring of 1998 include a
10 bundle of optical fibers?
11 MR. COSTAKOS: Objection. Form.
12 THE WITNESS: Sorry. Say that again.
13 MR. SHULMAN: Yeah.
14 BY MR. SHULMAN:
15 Q. In -- just speaking in general terms now.
16 A. Sure.
17 Q. But did the Walt technology that you saw up at
18 Walt's lab in the spring of '98 include a bundle of
19 optical fibers?
20 MR. COSTAKOS: Objection. Form.
21 THE WITNESS: It certainly included this
22 monolithic bundle of fibers that I described.

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1 I -- I do know that there were -- there was a
2 predecessor technology where there were individual
3 fibers, separate fibers that were bundled together,
4 and -- without, as far as I know, beads in the work, and
5 wells at the ends of them.
6 So -- so on my visit to Walt's lab, I don't
7 recall -- I don't recall seeing anything of that
8 technology, but I did certainly see these monolithic
9 bundles etched with wells with beads in them.
10 BY MR. SHULMAN:
11 Q. Okay. So the technology that you saw in the
12 spring of '88 -- spring of '98, rather, included a bundle
13 of optical fibers?
14 A. Of the type --
15 MR. COSTAKOS: Objection. Form.
16 THE WITNESS: -- I described, yes.
17 BY MR. SHULMAN:
18 Q. And, collectively, the fibers in this bundle
19 formed an array of optical fibers?
20 MR. COSTAKOS: Objection. Form.
21 THE WITNESS: Well, it -- I don't know what you
22 mean by "an array of optical fibers."

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1 It was a monolithic -- the device was a
2 monolithic bundle of individual fibers fused together, so
3 that's what I mean by monolithic. You know, it's a
4 preexisting thing made by optical fiber-making companies,
5 like glass companies and so on.
6 So individual fibers fused together into a
7 monolithic block. That's what I saw.
8 BY MR. SHULMAN:
9 Q. Sure. So the bundle of fibers was a collection
10 of individual fibers that had been fused together?
11 A. That's right.
12 Q. Okay. And the end of each fiber in this
13 collection of fibers in the bundles had a tiny well
14 etched into its surface. Correct?
15 A. That's right. I saw versions prior to etching.
16 They showed me the process by which they -- they -- they
17 polished them smooth and then they etched them and then
18 they put beads into them.
19 Q. Okay. And in each well, a small bead was or
20 could be attached. Correct?
21 MR. COSTAKOS: Objection. Form.
22 THE WITNESS: I think the operative word is --

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1 is "could be." And, again, we don't know how they
2 were -- the -- the process I can describe very simply,
3 you know, they had a -- some beads, so a mass of beads,
4 loose beads, and this etched optical fiber bundle, and
5 they would pipet a suspension of these beads. I don't
6 remember in what liquid, whether it was water or ethanol
7 or something like that. Just pipet a drop onto the end
8 of the optical fiber bundle, and the beads would
9 spontaneously settle into the wells, and that was how
10 the -- I guess, the device was formed.
11 BY MR. SHULMAN:
12 Q. Okay. And to each bead in the technology that
13 you saw in '98, a bioactive agent was or could be
14 attached. Is that correct?
15 MR. COSTAKOS: Objection. Form.
16 THE WITNESS: My -- my understanding at the
17 time was -- and this is a chemistry lab, you have to
18 remember -- that pretty much, you know, anything you
19 could attach to a surface, you could attach to this bead.
20 And I know that they -- they had interest in -- in
21 biological applications and what -- what I would consider
22 to be, you know, not so biological applications. But,

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1 yes, the bead is basically, you know, not that different
2 from just a flat glass surface.
3 BY MR. SHULMAN:
4 Q. Correct.
5 A. Whatever you can attach to a glass -- flat
6 glass surface you can attach to a bead.
7 Q. So in the technology that you saw in Dr. Walt's
8 lab in '98, a bioactive agent, among other materials --
9 A. If by --
10 Q. -- could be attached to the bead?
11 A. Yeah.
12 MR. COSTAKOS: Objection. Form.
13 THE WITNESS: If by "a bioactive agent" you
14 mean sort of a, you know, DNA, protein, yes.
15 BY MR. SHULMAN:
16 Q. Okay. And then this collection of bead --
17 collection of fibers that was in the bundle with beads
18 attached was intended to be dipped into some sort of
19 solution of target analyte. Correct?
20 MR. COSTAKOS: Objection. Form.
21 THE WITNESS: Again, it depends on the
22 application. And when I visited the Walt lab, I mean,

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1 David Walt had -- and his colleagues had clearly thought
2 of a, you know, wide range of uses for this platform
3 technology.
4 BY MR. SHULMAN:
5 Q. Right.
6 A. And some of them involved dipping into an
7 analyte and some did not.
8 Q. Okay. But at least some of them involved
9 dipping into an analyte?
10 A. Yes, that's right.
11 Q. Okay. And then after the dipping and the
12 technology that you saw in '98, you would detect whether
13 the bioactive agent on each bead bound with something in
14 the target analyte. Correct?
15 MR. COSTAKOS: Objection. Form.
16 THE WITNESS: And so, again, the -- the -- you
17 would -- the -- what I saw -- I'm trying to remember if I
18 saw any sort of -- any sort of application like that.
19 I certainly -- what I remember seeing was the
20 whole process of making these things, of putting the
21 beads in. I remember seeing the beads in -- in the wells
22 under the microscope.

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1 BY MR. SHULMAN:
2 Q. Let me ask the question a slightly different
3 way.
4 A. I'm -- I'm thinking they must have shown me
5 experiments where they did analysis, but, actually, I
6 don't -- I don't recall right now.
7 Q. But did you understand at the time that you
8 visited the Walt lab in the spring of '98 that the
9 technology would be used in such a way that you would
10 detect whether the bioactive agent on each bead bound
11 with something in the target analyte?
12 MR. COSTAKOS: Objection. Form.
13 THE WITNESS: Yes. That -- and that was my
14 interest in it. And I'm -- I don't recall how they were
15 doing their -- their assays. I know they were doing
16 assays. I don't remember if I saw them. I assume I must
17 have, but I just don't recollect. I do recollect seeing
18 these things being made.
19 I don't recall whether they were -- they were
20 dipping or whether they were doing the process whereby
21 they were pipetting onto the surface, but I'm not sure
22 that's a material difference.

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1 ///

2 BY MR. SHULMAN:

3 Q. Okay. Now, are you generally familiar with an

4 Illumina product or system known as the Sentrix

5 fiberoptic array?

6 A. Yes, I am.

7 Q. Okay. And according to what Dr. Stuelpnagel

8 told us last week, that product or system was first

9 commercially sold by Illumina beginning sometime in 2003.

10 Is that consistent with your recollection?

11 MR. COSTAKOS: Objection. Form.

12 THE WITNESS: You know, I think in general his

13 recollection of dates is probably better than mine, but

14 if he says -- he said it was then, it was probably round

15 about then. That seemed -- that's generally consistent,

16 but I wouldn't be able to tell you if it was, you know,

17 2003 or late 2002 or early 2004.

18 BY MR. SHULMAN:

19 Q. Okay. And that system or product, this Sentrix

20 fiberoptic array, had two basic components, namely the

21 fiberoptic bundles containing the beads with the

22 bioactive agents and the microtiter plates having the

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1 wells for the target analyte solutions. Is that correct?

2 MR. COSTAKOS: Objection. Form.

3 THE WITNESS: Let's see. The -- as I think of

4 the device, I think of it as the -- at the time an

5 aluminum block with the optical fiber bundles, with the

6 beads and, you know, DNA bound to them, oligo DNA bound

7 to them. And that was the device.

8 The -- the -- the plate in which the -- the

9 plate of wells in which these things were dipped --

10 actually, I don't -- I assume it must have come with one,

11 but I think that was an optional, sort of swappable

12 piece.

13 BY MR. SHULMAN:

14 Q. Okay. But did you understand -- let's talk

15 about the fiberoptic bundles first.

16 As sold by Illumina, the Sentrix array product

17 contained 96 bundles of optical fibers. Is that correct?

18 A. That's right.

19 Q. Okay. And approximately how many optical --

20 individual optical fibers were contained in each bundle,

21 roughly?

22 MR. COSTAKOS: Objection -- objection. Form,

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1 foundation.

2 THE WITNESS: I used to know all this very

3 well, you know.

4 BY MR. SHULMAN:

5 Q. Are we talking hundreds or thousands?

6 A. I want to say it was round about 50,000.

7 Q. Okay. And so each bundle of 50,000 fiberoptic

8 strands --

9 A. Of however many. I think it was, you know,

10 tens of thousands, yeah.

11 Q. Okay. So each bundle of tens of thousands of

12 fiberoptic strands contained an array of optical fibers.

13 Is that correct?

14 MR. COSTAKOS: Objection. Form.

15 THE WITNESS: It -- it's -- yeah, I know

16 semantics can be important to people in this sort of

17 situation, so I just want to be clear about this optical

18 fiber bundle is just simply a monolith block of

19 optical -- you could -- if you want to call it an array,

20 you -- of fibers, you can.

21 We used to call it an array, the whole -- the

22 whole thing once it was made with beads and everything,

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1 an array.

2 I don't think -- I don't think I used the

3 terminology "an array of fiber bundles" or "an array of

4 fibers" to describe that monolithic block, but I

5 certainly did use the terminology "an array" to describe

6 the whole device, the whole optical fiber bundle with

7 beads in it, with DNA on it, to do an assay with.

8 BY MR. SHULMAN:

9 Q. Okay. Well, let me --

10 A. I don't know that's a fine distinction, but I

11 hope that makes sense to you.

12 Q. Let me explore that. I'm not sure I fully

13 understood what you said.

14 Returning to the fiberoptic bundles in the

15 Sentrix array product, that product had 96 bundles of

16 fiberoptic bundles. Correct?

17 A. 96 fiberoptic bundles.

18 Q. Okay. And at least as it was intended to be

19 used, each of the fibers in each of the 96 bundles had

20 attached to it a bead with some bioactive agent attached

21 Correct?

22 MR. COSTAKOS: Objection. Form.

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<p>1 THE WITNESS: Well, again, you say the bead was 2 attached, and, you know, beads could and did sometimes 3 fall out. And not every bead -- not every well contained 4 a bead. So it was, by no means, a sort of -- a -- you 5 know, an object where every well contained a bead and the 6 bead was attached. I mean, it was a -- it was a -- we -- 7 you know, we -- we called -- we talked about a process 8 where these beads were -- spontaneously went into the 9 wells and some fell out. 10 BY MR. SHULMAN: 11 Q. Okay. That's why I said "intended." 12 Is it correct that the product was intended to 13 be used so that ideally each fiberoptic strand in each of 14 the 96 bundles would have a bead in its well to which was 15 attached a bioactive agent? 16 MR. COSTAKOS: Objection. Form. 17 THE WITNESS: A perfect -- a perfect form of 18 the device would fit that description, I would say, that 19 every -- every well would have a bead in it with some -- 20 with some useful molecules attached to the surface. 21 But we never had any sort of -- that's an 22 abstract concept. We never had, I think, any sort of</p> <p style="text-align: right;">Page 34</p>	<p>1 occupied by beads with a useful molecule attached. Okay? 2 Was that collection of fiberoptic strands in a 3 given bundle with wells occupied by beads an array, in 4 your view? 5 MR. COSTAKOS: Objection. Form. 6 THE WITNESS: Sorry. Say that again, because I 7 think it was -- 8 BY MR. SHULMAN: 9 Q. Sure. 10 A. -- but I just want to hear it again. 11 Q. Okay. I just want to focus on one of the 96 12 bundles. 13 A. One of these 96 bundles. 14 Q. Correct. And in that bundle with 96 fiberoptic 15 strands where most of the wells are occupied with beads 16 with bioactive agents -- 17 A. Wait. Wait a minute. I think that's where 18 maybe I was confused. 19 You're talking about one of these bundles, but 20 you said 96 strands? 21 Q. That are fused together to form the bundle. 22 Correct.</p> <p style="text-align: right;">Page 36</p>
<p>1 real life conception of -- of such a perfect device. I 2 mean -- 3 BY MR. SHULMAN: 4 Q. Sure. 5 A. -- we never expected it to be -- 6 Q. Right. 7 A. -- for that to exist. It might have existed 8 somewhere, but we really didn't care one way or another 9 if it did. 10 Q. But that was the intent of the system 11 recognizing that you wouldn't always fill all the wells 12 with beads? 13 A. The -- I would say the -- I'm not sure it's 14 fair to say that was the intent of the system. 15 At least to me, the intent of the system -- if 16 by "intent" you're talking about, you know, how -- how 17 this thing is -- is manufactured to -- to be, would be -- 18 the intent of the system would be to have most of the 19 wells occupied by useful beads. 20 Q. Fair enough. 21 Now, in the Sentrix array product, let me focus 22 on one of the 96 bundles where most of the wells were</p> <p style="text-align: right;">Page 35</p>	<p>1 A. I think it was tens of thousands of strands. 2 Q. Oh, I'm sorry, I'm sorry. Let me start over. 3 Yes, you're right. 4 I want to focus on one of the 96 bundles in the 5 Sentrix array -- 6 A. Product. 7 Q. -- matrix product. 8 A. Okay. 9 Q. Okay? 10 Is it correct that the collection of tens of 11 thousands of strands in that bundle where most of the 12 wells are occupied by beads that have bioactive agents, 13 that one bundle constitute an array? 14 MR. COSTAKOS: Objection. Form. 15 THE WITNESS: I would often call that device an 16 array, yes. 17 BY MR. SHULMAN: 18 Q. Okay. And going back to the technology that 19 you saw in Dr. Walt's lab in the spring of '98, is it 20 correct that the bundle of fiberoptic strands where most 21 of the wells were occupied with beads to which a useful 22 bioactive agent was attached constituted an array?</p> <p style="text-align: right;">Page 37</p>

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1 MR. COSTAKOS: Objection. Form, foundation
2 THE WITNESS: In -- in his case, actually, most
3 of the wells were empty, to the best of my recollection.
4 But -- but, yes, I -- and I don't know if this is a fine
5 distinction or not. Although I personally didn't --
6 didn't use the terminology of "an array of optical
7 fibers" -- I tended to call it a bundle of optical
8 fibers -- I did use the terminology of "the bundle of
9 optical fibers with wells etched with beads in them with
10 some agent, active molecule on them," called that an
11 array.
12 MR. SHULMAN: Okay. Fair enough.
13 BY MR. SHULMAN:
14 Q. So is it correct that the Sentrix array
15 product, as it was first released back in 2003, there
16 were 96 bundles containing tens of thousands of
17 fiberoptic strands each where most of the strands had a
18 well in which a bioactive agent was attached to a bead in
19 that well, that that collection of 96 was an array or
20 matrix of 96 individual arrays?
21 MR. COSTAKOS: Objection. Form.
22 THE WITNESS: To the best of my recollection,
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1 we -- we struggled to find a name for that device that
2 wasn't awkward. And there were -- there were two names
3 that I recollect being sort of fairly commonly used. One
4 was an array of arrays and -- which I wasn't -- I think
5 I'm -- I'm not even sure, I may even have come up with
6 it, I'm not sure, but it was not -- or Dr. Stuelpnagel or
7 someone, but it was not -- it sounded awkward, or an
8 array matrix. Those were the two commonly used terms.
9 BY MR. SHULMAN:
10 Q. Okay. So you used either "an array of arrays"
11 or the phrase "array matrix" to refer to this collection
12 of 96 bundles?
13 A. To refer to this aluminum block that contained
14 96 bundles set in it.
15 Q. Okay. Now let's focus on the microtiter plate
16 portion of the system, of the Sentrix array system.
17 The Sentrix fiberoptic array system also used a
18 microtiter plate containing 96 sample solution wells.
19 Correct?
20 A. Microtiter plate containing 96 wells. And you
21 could certainly put samples in them, yes.
22 Q. Okay. And in the Sentrix fiberoptic array
Page 39

1 system back in 2003, is it correct that the 96 wells in
2 the microtiter plate, as well as their spacing and
3 configuration, matched the spacing and configuration of
4 the matrix of 96 fiberoptic bundles that contained the
5 beads?
6 MR. COSTAKOS: Objection. Form.
7 THE WITNESS: That's correct. The array matrix
8 was designed so that the 96 optical fiber bundles could
9 be dipped into solutions in a matching 96-well microtiter
10 plate.
11 BY MR. SHULMAN:
12 Q. Okay. And is it correct that in the Sentrix
13 fiberoptic array system back in 2003, each of the 96
14 fiberoptic bundles in this matrix of fiberoptic bundles
15 was intended to be inserted simultaneously into its own
16 sample solution well in the microtiter plate?
17 A. I would say yes. It depends what you mean by
18 "simultaneously," but effectively so, yes.
19 Q. Okay. And each of the wells in the microtiter
20 plate was intended to contain some type of target analyte
21 solution. Correct?
22 MR. COSTAKOS: Objection. Form.
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1 THE WITNESS: Not -- not -- not always. It's,
2 you know -- of course, the -- these assays are multistep
3 processes, and in -- and sometimes when you're doing
4 this, there's no analyte present at certain steps, but
5 obvious -- obviously, I think when you're analyzing
6 something with this device, at some point there would be
7 an analyte solution.
8 BY MR. SHULMAN:
9 Q. In each of the 96 wells?
10 A. Not necessarily in -- in each of them. It's
11 quite possible, reasonable to have some wells used to
12 analyze and some not.
13 Q. Okay.
14 A. Or they may contain controls, for example, just
15 no analyte as a negative control. So you could certainly
16 vary what was in those wells, and that was completely
17 normal to do so.
18 Q. Okay. Now let's return to this array matrix of
19 96 fiberoptic bundles. You mentioned that the spacing
20 and configuration of those bundles matched the spacing
21 and configuration of the wells in the microtiter plate.
22 Correct?
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<p>1 A. That's right.</p> <p>2 Q. And did the Sentrix fiberoptic array product</p> <p>3 have some type of a fixture, some housing that held the</p> <p>4 fiberoptic bundles so that they lined up with the wells</p> <p>5 in the microtiter plate?</p> <p>6 MR. COSTAKOS: Objection. Form.</p> <p>7 THE WITNESS: I -- I believe it did. I should</p> <p>8 be able to remember this. There was a -- there was a</p> <p>9 skirt round the device, but now -- now I'm struggling to</p> <p>10 remember whether that was -- to what extent that was</p> <p>11 cosmetic versus having an actual alignment function. You</p> <p>12 know, there were various iterations of this thing. I --</p> <p>13 I think there may well have been iterations where a</p> <p>14 proper alignment was just dependent on the user being</p> <p>15 very careful.</p> <p>16 BY MR. SHULMAN:</p> <p>17 Q. I understand that, but was there some sort of</p> <p>18 fixture that held the 96 bundles securely so that they</p> <p>19 could be inserted into the wells of the microtiter plate?</p> <p>20 MR. COSTAKOS: Objection. Form.</p> <p>21 THE WITNESS: Oh. Maybe I'm misunderstanding</p> <p>22 your question.</p> <p style="text-align: right;">Page 42</p>	<p>1 how you and he and Mr. Auger first came up with this idea</p> <p>2 for the array matrix format in the summer of '98.</p> <p>3 MR. SHULMAN: Let me ask the reporter to mark</p> <p>4 as Exhibit 2 some trial testimony from Dr. Stuelpnagel</p> <p>5 from March 8, 2007.</p> <p>6 (Exhibit 2 was marked.)</p> <p>7 BY MR. SHULMAN:</p> <p>8 Q. Are you aware of the fact that there was a</p> <p>9 prior lawsuit between Affymetrix and Illumina?</p> <p>10 A. Yes.</p> <p>11 Q. You testified in that lawsuit as well, at least</p> <p>12 on deposition. Correct?</p> <p>13 A. Is -- is this the deposition to do with that?</p> <p>14 Q. Yes.</p> <p>15 Would you please turn to page 1035, which are</p> <p>16 the numbers in the lower right-hand corner of Exhibit 2.</p> <p>17 A. 1035, yes.</p> <p>18 Q. Okay. Let me read Dr. Stuelpnagel's testimony</p> <p>19 beginning at line 15 of page 1035. You can just follow</p> <p>20 along.</p> <p>21 "Question: And can you describe how the array</p> <p>22 matrix format was arrived at?</p> <p style="text-align: right;">Page 44</p>
<p>1 I thought you were asking whether there was</p> <p>2 something that controlled alignment of the -- the entire</p> <p>3 array matrix as a -- as a unit to the plate, but are you</p> <p>4 actually asking, was there something that controlled the</p> <p>5 positions of the 96 bundles with respect to each other?</p> <p>6 BY MR. SHULMAN:</p> <p>7 Q. Yes, that's what I'm asking.</p> <p>8 A. Okay. Well, in that case, as I mentioned</p> <p>9 earlier, there was an aluminum block that these bundles</p> <p>10 were glued into.</p> <p>11 Q. So it was like a thin aluminum plate with holes</p> <p>12 at the appropriate spots so that the bundles could be</p> <p>13 glued into the holes?</p> <p>14 A. That's correct. Always caused me a lot of</p> <p>15 angst because this seemed like a -- you know, a lot of</p> <p>16 aluminum to be -- to be in a disposable. I always wished</p> <p>17 we could find something that was less -- less wasteful of</p> <p>18 resources, but, you know, we were getting a lot of</p> <p>19 information per array matrix.</p> <p>20 Q. Okay. Now, I want to focus on this array</p> <p>21 matrix format that you've been describing to us, and I</p> <p>22 want to show you some testimony of Dr. Stuelpnagel about</p> <p style="text-align: right;">Page 43</p>	<p>1 "Answer: Yes. In the summer of 1998, I</p> <p>2 mentioned that we were trying to think about ways in</p> <p>3 which we could format these bead arrays into products</p> <p>4 that would be useful to customers.</p> <p>5 "And I was actually out for a run thinking and</p> <p>6 maybe obsessing a little bit about the Illumina</p> <p>7 technology and started to realize that this array was</p> <p>8 fundamentally different in its physical form from</p> <p>9 everybody else's arrays, too.</p> <p>10 "So in addition to being different in how we</p> <p>11 manufactured it, they were different in form. And what</p> <p>12 was unique about these arrays is that you could take this</p> <p>13 fiber bundle and put it into a sample.</p> <p>14 "Everybody else took a sample and poured it</p> <p>15 onto the array. So I started thinking about that and</p> <p>16 what you could do that would be different from what</p> <p>17 everybody else was doing.</p> <p>18 "I came back and started talking. My</p> <p>19 colleagues, we were brainstorming. And after that</p> <p>20 brainstorming session, we realized that what we could do</p> <p>21 is use this array and insert it into a microtiter plate.</p> <p>22 "I believe you saw one of those. It's a common</p> <p style="text-align: right;">Page 45</p>

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<p>1 format where wells are in a 96 arrangement, and people</p> <p>2 commonly use those for experimentation in the lab.</p> <p>3 "What we could do with this array matrix is</p> <p>4 literally just insert it right into the microtiter plate,</p> <p>5 and you could do experiments on a sample basis at higher</p> <p>6 inputs than anybody else considered at the time."</p> <p>7 Did I read that correctly, sir?</p> <p>8 A. Yes, I think you did.</p> <p>9 MR. SHULMAN: Okay. Let me show you some</p> <p>10 additional testimony of Dr. Stuelpnagel from his</p> <p>11 deposition in the prior lawsuit between Illumina and</p> <p>12 Affymetrix, which we'll mark as Exhibit 3.</p> <p>13 (Exhibit 3 was marked.)</p> <p>14 THE WITNESS: Do you want this Exhibit 1 back?</p> <p>15 MR. SHULMAN: No. Just leave it there. That's</p> <p>16 fine.</p> <p>17 THE WITNESS: Okay.</p> <p>18 MR. SHULMAN: You might want to put the clip on</p> <p>19 just so the pages don't come apart.</p> <p>20 THE WITNESS: No. It's all right.</p> <p>21 BY MR. SHULMAN:</p> <p>22 Q. Now, in Exhibit 3, if you would look at the</p> <p style="text-align: right;">Page 46</p>	<p>1 "Answer: Uh-huh.</p> <p>2 "Question: Do you think about four?</p> <p>3 "Answer: Okay.</p> <p>4 "Question: I'm asking you if you think that's</p> <p>5 correct.</p> <p>6 "Answer: I don't know.</p> <p>7 "Question: Do you have no idea?</p> <p>8 "Answer: Huh-uh.</p> <p>9 "Question: When you say, quote,</p> <p>10 format-related, unquote, what are you talking about?</p> <p>11 "Answer: Oh, for instance, the array matrix</p> <p>12 was a big part of an invention that I contributed to in a</p> <p>13 large way.</p> <p>14 "Question: You contributed in a large way to</p> <p>15 the invention of the Sentrix array matrix?</p> <p>16 "Answer: I believe so.</p> <p>17 "Question: What was your contribution to that?</p> <p>18 "Answer: Well, the invention happened in a</p> <p>19 board room with Tony Czarnik -- not Tony Czarnik. I'm</p> <p>20 sorry -- Mark Chee and Steve Auger and myself. And I had</p> <p>21 been running that weekend and was thinking about these</p> <p>22 probe arrays and how they're different than everybody</p> <p style="text-align: right;">Page 48</p>
<p>1 page with the funny number in the lower right-hand corner</p> <p>2 that ends with 171. Do you have that?</p> <p>3 A. I think so.</p> <p>4 Q. And in the lower left quadrant, there should be</p> <p>5 the internal transcript page 155. Do you see that?</p> <p>6 A. Yes, I do.</p> <p>7 Q. Okay. Let me read Dr. Stuelpnagel's testimony</p> <p>8 beginning at line 13 on page 155.</p> <p>9 "Question: Which patents are you on?</p> <p>10 "Answer: Lots.</p> <p>11 "Question: How many?</p> <p>12 "Answer: I don't even know which ones are</p> <p>13 patents and which ones are applications, but there are</p> <p>14 some that are assay applications and patents and some</p> <p>15 that are decoding and some that are format-related.</p> <p>16 "Question: When you say, quote,</p> <p>17 format-related, unquote, do you mean -- so do you know</p> <p>18 how many issued patents there are in your name?</p> <p>19 "Answer: No.</p> <p>20 "Question: More or less than five?</p> <p>21 "Answer: Probably around that number.</p> <p>22 "Question: Around that number?</p> <p style="text-align: right;">Page 47</p>	<p>1 else's arrays -- this is the fiberoptic, because that's</p> <p>2 the only format we had at the time -- and how you could</p> <p>3 actually put that into a well and bring the array to the</p> <p>4 solution as opposed to bringing the solution to the</p> <p>5 array. And so I was thinking about what are the</p> <p>6 implications of that, what can you do. And I started to</p> <p>7 think about how you could match those to wells in</p> <p>8 microtiter plates. So we started brainstorming around</p> <p>9 that. And I think it was in the next day -- it might</p> <p>10 have been a couple of days later -- and we, the three of</p> <p>11 us, came up with this idea of putting 96 arrays together</p> <p>12 to match the wells in the microtiter plates. And that's</p> <p>13 the array matrix.</p> <p>14 "Question: And was the patent ultimately filed</p> <p>15 in the names of you, Dr. Auger, and Dr. Chee?</p> <p>16 "Answer: That's correct."</p> <p>17 Did I read that correctly?</p> <p>18 A. I think you did, yes.</p> <p>19 Q. Do you agree with Dr. Stuelpnagel's testimony</p> <p>20 that you, Auger, and he first arrived at the array matrix</p> <p>21 format during a brainstorming session in the summer of</p> <p>22 1998?</p> <p style="text-align: right;">Page 49</p>

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<p>1 MR. COSTAKOS: Objection. Form, foundation, 2 also to the extent to which it incorporates both of these 3 two documents into it.</p> <p>4 THE WITNESS: To the best of my recollection, 5 that -- that's correct. I agree with that.</p> <p>6 I -- now going through these, you know, I do 7 also recall, I think, you know, David Walt saying that -- 8 that these things, because of their -- the nature of 9 them, because the array is sort of comprised, in essence, 10 a stick form, you know, had a length dimension, that 11 these were dipable.</p> <p>12 But, yes, I think that this is generally 13 correct, that we -- we sort of maybe formalized this 14 concept and came up with the idea of how to do this in a, 15 you know, high throughput way by making use of 16 preexisting lab where -- making a 96 format where we 17 could sort of, you know, dip, change plates easily, 18 enable parallel experimentation that way through this 19 simple mechanical feature of the -- of the device, that 20 it had a length, kind -- I think we used to say it was -- 21 I used to say it was a like a toothpick, you know, a flat 22 toothpick.</p> <p style="text-align: right;">Page 50</p>	<p>1 typically have, some sort of a more formal structured 2 interviewing evaluation process.</p> <p>3 BY MR. SHULMAN:</p> <p>4 Q. Okay. But whether formal or informal, you did 5 participate in those types of activities?</p> <p>6 A. Yes, I did.</p> <p>7 Q. Okay. And did you interview any potential 8 hires for Illumina in the first half of 1998?</p> <p>9 A. My -- my recollection of this is pretty vague. 10 I do recall being asked for an opinion on whether Tony 11 Czarnik should join the company and meeting Tony, and I 12 think that was -- I don't remember, actually, when that 13 was, but I think that -- that may even have been at David 14 Walt's, when I was at David Walt's. I'm not sure. 15 But -- and I think there were a couple of others that I 16 was asked about.</p> <p>17 Q. Who else were you asked about beyond 18 Mr. Czarnik -- or Dr. Czarnik?</p> <p>19 A. I think it was -- and to some extent, you know, 20 there wasn't much debate because, one, I recall, I think 21 was Todd Dickinson, whom I met when I visited David 22 Walt's lab. And he'd be working with the technology. He</p> <p style="text-align: right;">Page 52</p>
<p>1 BY MR. SHULMAN:</p> <p>2 Q. Okay. Now, before you joined Illumina in June 3 of '98, did you participate in any way in evaluating 4 whether any particular individuals should be hired by 5 Illumina should Illumina be formed?</p> <p>6 MR. COSTAKOS: Objection. Form.</p> <p>7 And when you say "joined," you mean formally 8 joined?</p> <p>9 MR. SHULMAN: Correct.</p> <p>10 BY MR. SHULMAN:</p> <p>11 Q. I said before you joined Illumina in June of 12 '98, which is when you were hired, did you participate in 13 any way in evaluating whether any particular individuals, 14 other than yourself, should be hired by Illumina after 15 Illumina was formed, should it have the good fortune of 16 being formed?</p> <p>17 MR. COSTAKOS: Objection. Form, foundation</p> <p>18 THE WITNESS: I -- I -- I did. I think, you 19 know -- there was no formal process. So, you know, I -- 20 I think I -- I was asked for opinions. I gave -- I sort 21 of shared opinions, but we weren't at the stage that I 22 can recall where, you know, you have what companies</p> <p style="text-align: right;">Page 51</p>	<p>1 was a student there and he -- clearly an exceptional 2 student. So, you know, we didn't really have much of a 3 debate. It seemed sort of a sensible thing to have 4 someone like that join the company if he was enthusiastic 5 about it.</p> <p>6 Q. Anyone else besides Mr. Dickinson and 7 Dr. Czarnik?</p> <p>8 A. I'm hesitating because I'm -- I'm struggling a 9 bit with the timing. Todd, I recall, as being before 10 Tony Czarnik. I recall as being before Steve Auger. 11 Must have been before. And there was Steven Barnard. 12 I'm -- I think must have been before, too. I'm not 13 entirely sure.</p> <p>14 Q. How about, did you consider, in the first half 15 of '98, hiring any folks who ultimately didn't join 16 Illumina?</p> <p>17 A. Any folks who did not join Illumina.</p> <p>18 There -- there -- there was -- that I can 19 recall, there was -- there was -- I -- I can't remember 20 the dates. That's my problem. I can't remember the 21 dates, so --</p> <p>22 Q. Well, regardless of the dates, just people that</p> <p style="text-align: right;">Page 53</p>

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<p>1 you considered hiring that didn't join in the early days 2 of Illumina.</p> <p>3 A. There was David Stern, who we considered 4 hiring, and he didn't join. That's the only one I can 5 recall at the moment.</p> <p>6 Q. Anyone else?</p> <p>7 A. Not at the moment. Can you maybe -- do you 8 have someone in mind? Can you refresh my memory?</p> <p>9 Q. Yeah, we're going to get to some examples in a 10 little, but I was just testing your memory.</p> <p>11 A. Oh.</p> <p>12 Q. Before joining Illumina, did you read any 13 letters or email written by persons other than yourself, 14 Stuelpnagel or Walt concerning the Walt technology?</p> <p>15 MR. COSTAKOS: Objection. Form, foundation</p> <p>16 THE WITNESS: Let's see. So before -- 17 before -- you're -- you're asking if before we 18 incorporated -- before we -- before I became an employee 19 in June --</p> <p>20 BY MR. SHULMAN:</p> <p>21 Q. Correct.</p> <p>22 A. -- did I read any emails?</p> <p style="text-align: right;">Page 54</p>	<p>1 have join Illumina, but who ultimately did not, was a 2 person by the name of Dan Shoemaker.</p> <p>3 BY MR. SHULMAN:</p> <p>4 Q. Okay. Now, you mentioned -- I mentioned and 5 you've mentioned Steve Auger. Am I pronouncing his name 6 correctly or is it Auger?</p> <p>7 A. It's Auger.</p> <p>8 Q. Okay. And you obviously know him. Correct?</p> <p>9 A. Yes, I do.</p> <p>10 Q. And you knew him before he joined Illumina?</p> <p>11 A. That's right.</p> <p>12 Q. And how did you know him?</p> <p>13 A. He was an employee of nGenetics.</p> <p>14 Q. For how long?</p> <p>15 A. I don't recall.</p> <p>16 Q. Are we talking years or months?</p> <p>17 A. Oh, no. The company -- I think it's pretty 18 safe for me to say it would have been less than a year.</p> <p>19 Q. Okay.</p> <p>20 A. Significantly less than a year.</p> <p>21 Q. And he lived in Massachusetts at the time?</p> <p>22 MR. COSTAKOS: Objection. Form.</p> <p style="text-align: right;">Page 56</p>
<p>1 Absolutely, yes.</p> <p>2 Q. Okay.</p> <p>3 A. I don't recall specifically what they were, but 4 there were definitely email exchanges.</p> <p>5 Q. And my question was a little bit more specific. 6 Did you read any email or letters written by 7 persons other than yourself, Dr. Stuelpnagel, and 8 Dr. Walt --</p> <p>9 A. Oh.</p> <p>10 Q. -- concerning the Walt technology?</p> <p>11 A. Okay.</p> <p>12 MR. COSTAKOS: Objection. Form, also ambiguous 13 as to time.</p> <p>14 MR. SHULMAN: Same time period, before joining 15 Illumina.</p> <p>16 THE WITNESS: Before joining Illumina. So I 17 recall emails by Dr. Walt, Dr. Stuelpnagel, and myself, 18 and I'm pretty sure -- can't be a hundred percent sure, 19 but I'm pretty sure Tony Czamk as well.</p> <p>20 Others, I -- I don't -- I don't recall.</p> <p>21 Oh, wait a minute. There was -- wait a 22 minute -- someone I -- someone who I was very keen to</p> <p style="text-align: right;">Page 55</p>	<p>1 THE WITNESS: That's -- I think that's correct, 2 yes. I think he was in Massachusetts.</p> <p>3 BY MR. SHULMAN:</p> <p>4 Q. He was on the east coast, at least?</p> <p>5 A. He was on the east coast, yes.</p> <p>6 Q. Okay. And you were on the west coast?</p> <p>7 A. That's right.</p> <p>8 Q. But -- and where was nGenetics located?</p> <p>9 A. On the west coast in Palo Alto.</p> <p>10 Q. Okay. And how did you meet Mr. Auger?</p> <p>11 A. He was recommended to me by -- by someone 12 who -- whom I collaborated with, I think. I'm pretty 13 sure it was someone I collaborated with who was at MIT.</p> <p>14 Q. Okay. And so you hired him for nGenetics 15 sometime in 1997?</p> <p>16 A. I think that's correct, yes.</p> <p>17 Q. Okay. And did you recommend him to Stuelpnagel 18 for Illumina?</p> <p>19 A. I believe so.</p> <p>20 Q. Okay. And that was sometime in '98?</p> <p>21 A. I don't recall.</p> <p>22 Q. Okay. So according to Dr. Stuelpnagel -- is it</p> <p style="text-align: right;">Page 57</p>

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1 Dr. Auger or Mr. Auger? Or -- not that it matters, but
2 at least we should be correct.
3 A. You know, I don't recall. I want to say it was
4 Mr. Auger, but I don't -- I don't recall.
5 Q. Okay. I'll call him mister.
6 Mr. Auger joined Illumina in June of '98.
7 That's when he was hired. Is that consistent with your
8 recollection?
9 MR. COSTAKOS: Objection. Form, foundation
10 THE WITNESS: That sounds like it should be
11 right, but I don't recall exactly when he was hired.
12 BY MR. SHULMAN:
13 Q. Okay. But he had to move to San Diego in order
14 to begin working for Illumina?
15 A. That's correct.
16 Q. And I assume that happened after he was hired
17 or --
18 MR. COSTAKOS: Objection. Form.
19 BY MR. SHULMAN:
20 Q. -- at or about the time he was hired?
21 A. You know, I don't recall.
22 Q. Okay. Do you recall any face-to-face meetings

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1 in 1998 between you, Stuelpnagel, and Auger that took
2 place before he moved to San Diego to join Illumina?
3 MR. COSTAKOS: Objection. Form, foundation
4 THE WITNESS: It's -- it's so long ago, I don't
5 remember people's -- where people lived in relation to --
6 to when they were hired at the time.
7 We certainly had people who -- you know, who
8 showed up who were still -- I think Todd, for example,
9 Dickinson showed up, I want to say, at least once or
10 twice when he was still living in Boston.
11 BY MR. SHULMAN:
12 Q. Okay.
13 A. I think it was the same with Steven Barnard.
14 I'm -- I don't recall exactly where Steve Auger was
15 domiciled at the time we were having meetings.
16 Q. Okay. Do you recall this brainstorming session
17 that we looked at earlier at this meeting in this
18 conference room in Cardiff?
19 A. You know, I have a somewhat blurry
20 recollection. I don't think I have a sharp recollection
21 of specifically this session. I have a recollection of
22 several brainstorming sessions that we had in this

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1 meeting in Cardiff. I certainly recollect this general
2 discussion.
3 Q. Okay. And the Cardiff conference room was in
4 CW's facilities?
5 A. That's right.
6 Q. Now, let's go back to the Walt technology that
7 existed in Dr. Walt's lab that you saw before joining
8 Illumina.
9 In the Walt technology, Dr. Walt had inserted
10 his fiberoptic bundle containing these beads into a
11 sample solution located in some sort of small test tube
12 Correct?
13 MR. COSTAKOS: Objection. Form.
14 THE WITNESS: I think that's correct. Again, I
15 remember clearly that there was pipetting onto the end,
16 and I'm pretty sure there was also dipping, but -- but
17 I'm having trouble remembering -- actually, I do -- I
18 want to say I do remember -- I think I do remember
19 dipping for etching. I'm not a hundred percent sure if
20 there was dipping into a tube for an assay. I'm guessing
21 there was, but I'm just not recollecting, you know,
22 seeing that -- that image in my mind.

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1 BY MR. SHULMAN:
2 Q. Sure. But you were aware that Dr. Walt had
3 done that. Correct?
4 MR. COSTAKOS: Objection. Form.
5 BY MR. SHULMAN:
6 Q. Namely, the dipping of a bundle into a tube.
7 A. You know, this is a -- this is sort of a funny
8 level of detail.
9 I'm -- it seems obvious to me at this point
10 that he must have done that, but I'm sufficiently removed
11 from that time that I'm actually struggling to -- to make
12 a direct connection in my mind to dipping in his lab.
13 Q. Okay.
14 A. Maybe there's a paper there that clarifies it.
15 Q. That's exactly what I was going to show you.
16 A. Okay.
17 MR. SHULMAN: Could we mark as Exhibit 4 a
18 paper written in -- or published in December of '96
19 naming Walt as one of the authors entitled "A Fiberoptic
20 DNA Biosensor Micro Array for the Analysis of Gene
21 Expression."
22 (Exhibit 4 was marked.)

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<p>1 BY MR. SHULMAN:</p> <p>2 Q. And I won't condemn you to read the whole</p> <p>3 thing, but let me point to you the section that I think</p> <p>4 might be germane.</p> <p>5 If you look at the first page in the left-hand</p> <p>6 column under "results and discussion," you'll see that it</p> <p>7 says, "The tips of the array were placed directly in the</p> <p>8 target solution, which can be as small as 3 microliters</p> <p>9 in a .4 milliliter --</p> <p>10 A. So --</p> <p>11 Q. -- Eppendorf tube?</p> <p>12 A. Yup. So he was clearly -- clearly dipping.</p> <p>13 Q. Okay.</p> <p>14 A. And -- and you know, I'm -- I'm pretty sure he</p> <p>15 was dipping. Just that, you know, again, under oath, I</p> <p>16 just can't quite remember seeing that when I visited his</p> <p>17 lab, but I'm sure I did.</p> <p>18 Q. That's fine. Okay.</p> <p>19 As far as you, Chee and Auger knew in the</p> <p>20 summer of '98, had Dr. Walt inserted his bead-containing</p> <p>21 fiberoptic bundle into a microtiter well plate?</p> <p>22 MR. COSTAKOS: Objection. Form.</p> <p style="text-align: right;">Page 62</p>	<p>1 BY MR. SHULMAN:</p> <p>2 Q. Correct?</p> <p>3 A. You know, I want to say that -- to me, dipping</p> <p>4 into some liquid, whether it's sitting as a drop on the</p> <p>5 table, in a tube, or in the well of a microtiter plate,</p> <p>6 seems to me dipping is dipping. You know, the things are</p> <p>7 commonly enough used in a lab that if you dipped into</p> <p>8 one, you could dip into another.</p> <p>9 I want to say that much clearer -- and I think,</p> <p>10 in fact -- I think, in fact, that David Walt even</p> <p>11 mentioned these are dipable. I think I might have</p> <p>12 mentioned that earlier.</p> <p>13 I want to say that I think perhaps what was</p> <p>14 different about our discussion, the one you're referring</p> <p>15 to between --</p> <p>16 Q. The brainstorming?</p> <p>17 A. The brain -- brainstorming session --</p> <p>18 discussion was perhaps not so much the concept of</p> <p>19 dipping, but that we could, you know, form a monolithic</p> <p>20 block where 96 of these were -- were -- were sort of put</p> <p>21 into a device -- a device was made, made of 96 individual</p> <p>22 bundles that could then be, you know, turned into arrays,</p> <p style="text-align: right;">Page 64</p>
<p>1 THE WITNESS: Not that I can --</p> <p>2 MR. COSTAKOS: Foundation, also.</p> <p>3 THE WITNESS: I don't recall him inserting into</p> <p>4 a micro -- I only saw individual fiberoptic bundles sort</p> <p>5 of handled individually. So I'm actually -- I don't</p> <p>6 recall, but I'm pretty sure that it was -- it was, you</p> <p>7 know, pipets and individual tubes.</p> <p>8 BY MR. SHULMAN:</p> <p>9 Q. Okay. And as far as you personally knew in the</p> <p>10 summer of '98, had anyone else thought of inserting a</p> <p>11 bead-containing fiberoptic bundle into a microtiter well</p> <p>12 plate apart from you, Auger, and Stuelpnagel?</p> <p>13 MR. COSTAKOS: Objection. Form.</p> <p>14 THE WITNESS: Not to my recollection.</p> <p>15 MR. SHULMAN: Fair enough.</p> <p>16 BY MR. SHULMAN:</p> <p>17 Q. And in your own mind, in the summer of '98</p> <p>18 during this brainstorming session, inserting the</p> <p>19 bead-containing fiberoptic bundle into a microtiter well</p> <p>20 plate was something new and different from what Dr. Walt</p> <p>21 or anyone else had done, to your knowledge.</p> <p>22 MR. COSTAKOS: Objection. Form.</p> <p style="text-align: right;">Page 63</p>	<p>1 and that this whole device would then be very useful and</p> <p>2 very convenient for parallel processing of arrays. In</p> <p>3 fact, I think, you know, that was a term I certainly used</p> <p>4 fairly commonly, this sort of parallel processor concept.</p> <p>5 Q. Uh-huh.</p> <p>6 A. So I don't think it was dipping of a bundle</p> <p>7 per se. It was a device that would enable parallel</p> <p>8 dipping maybe was more the -- the -- my sense of what was</p> <p>9 new about this discussion.</p> <p>10 Q. Okay. So in the Walt technology that Walt had</p> <p>11 developed and that you saw before you joined Illumina,</p> <p>12 Walt only had a single fiberoptic bundle with beads that</p> <p>13 he dipped as opposed to a bundle of bundles that he</p> <p>14 dipped?</p> <p>15 A. I --</p> <p>16 MR. COSTAKOS: Objection. Form.</p> <p>17 BY MR. SHULMAN:</p> <p>18 Q. Is that correct?</p> <p>19 A. That's correct. To the best of my</p> <p>20 recollection, that's correct. I don't recall seeing</p> <p>21 anything in Walt's lab other than single bundles.</p> <p>22 Q. Okay. Now, when you and Stuelpnagel and Auger</p> <p style="text-align: right;">Page 65</p>

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1 came up with this brainstorming idea of bundling together	1 to be very flat. That was non-trivial. We spent a bit
2 several bundles of fiberoptic strands in this matrix of	2 of time thinking about how to do that.
3 arrays that you described, I take it that as far as you	3 BY MR. SHULMAN:
4 personally knew, neither Walt nor anyone else had	4 Q. Sure.
5 previously come up with that idea?	5 A. So a lot of that discussion, I think, was not
6 MR. COSTAKOS: Objection. Form.	6 around the concept of dipping per se. It was how do you
7 THE WITNESS: That's -- that's -- that's	7 enable parallel -- how do you enable making something
8 correct. That's the best of my recollection, yes.	8 that could let you dip 96 in parallel.
9 ///	9 And to my recollection, you know, no one else
10 BY MR. SHULMAN:	10 had the need to solve that particular problem. No one
11 Q. Okay. And in your mind in the summer of '98,	11 else was -- was -- was thinking about that.
12 inserting the multiple bundles of fiberoptic strands with	12 Q. Okay.
13 beads simultaneously into separate wells of a well plate	13 A. So probably I would emphasize that part as
14 was an idea that originated with you, Chee, and Auger	14 being the, you know, to -- at least, in my mind, the
15 during --	15 really new part of the discussion. I'm not sure that --
16 A. With me Stuelpnagel and Auger?	16 Q. Meaning the details of how you make this
17 Q. I'm sorry.	17 fixture that holds everything in place and is aligned
18 You, Stuelpnagel, and Auger during the	18 properly?
19 brainstorming session. Correct?	19 MR. COSTAKOS: Objection. Form.
20 MR. COSTAKOS: Objection. Form.	20 THE WITNESS: First of all --
21 THE WITNESS: Yes, to the best of my	21 BY MR. SHULMAN:
22 recollection. You know, I -- and I don't know -- again,	22 Q. Is that what you meant?
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1 I don't know that the -- I'm hesitating because, you	1 A. First -- yes, that's what I meant.
2 know, it seems to me that it's possible. You know,	2 So, first of all, just putting 96 of these
3 oftentimes you do have people thinking of the same thing	3 things into a monolithic block for purposes of, you know,
4 at the same time. It's -- it's sort of -- it's a very	4 processing many samples at a time. But then, you know,
5 well known phenomenon in science where if you see	5 the devil really is in the details. I -- it's a long
6 something, you know, new, lots of people will think of	6 time ago. I don't remember the discussion in much depth,
7 the same sort of thing.	7 but I -- I want to say that more of the discussion was
8 So the concept of dipping in something, I don't	8 focused on, you know, how do you do this? It's
9 know that -- I couldn't say that, you know, nobody else	9 non-trivial how do you do this.
10 ever -- ever came up with it.	10 Q. Okay. Where was Mr. Czarnik during this
11 The best of my recollection, we came up -- we	11 brainstorming session?
12 came up with it in -- in a brainstorming meeting in	12 A. You know, quite frankly, I -- I don't recall.
13 Cardiff.	13 I couldn't -- I couldn't even say for sure that he wasn't
14 What we certainly did as -- as well was, you	14 there. I don't think he was there, but he -- he did tend
15 know, we thought about the practical issues in terms of	15 to be more in and out when we were having some of these
16 how to enable that.	16 discussions. I think he was around, but I don't -- but
17 You know, these bundles -- and some of this was	17 sometimes he -- he was not present at some of these
18 Steve Auger's contribution, I think, you know, they have	18 meetings.
19 to be imaged with a very narrow sort of focal plane. So	19 Q. Okay.
20 as soon as you get to more than one, it becomes difficult	20 A. It's possible he was even in this meeting.
21 to do that. They have to be -- not only do they	21 Q. Now, the microtiter plate that you and
22 individually have to be very flat, the whole device has	22 Stuelpnagel and Auger contemplated using in the summer of
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<p>1 '98, those plates are typically made out of some sort of</p> <p>2 substrate like metal or plastic. Correct?</p> <p>3 A. Yes, most typically they're made out of</p> <p>4 plastic. I think only for very specialized purposes are</p> <p>5 they made out of metal.</p> <p>6 Q. And the microtiter well plates that you</p> <p>7 contemplated using in the summer of '98 can have 96 wells</p> <p>8 or 384 wells or 1536 wells. Correct?</p> <p>9 A. Yes. We contemplated all of those. I think we</p> <p>10 maybe were a bit too ambitious with the 1536, but -- but</p> <p>11 we -- we did think that that, at least from what we could</p> <p>12 see then, was possible.</p> <p>13 Q. What do you mean you were a bit too ambitious</p> <p>14 with the 1536?</p> <p>15 A. Again, like I said, you know, it's non-trivial</p> <p>16 to actually make a device like this and when you get to</p> <p>17 those very close spacings, just the precision involved,</p> <p>18 the lack of room to -- to assemble this makes it very,</p> <p>19 very challenging. So I don't think we ever made one.</p> <p>20 Q. Uh-huh. When did you come to realize that the</p> <p>21 1536 was not a practical approach?</p> <p>22 MR. COSTAKOS: Objection. Foundation.</p> <p style="text-align: right;">Page 70</p>	<p>1 VIDEOGRAPHER: We're on the record at</p> <p>2 10:28 a m.</p> <p>3 BY MR. SHULMAN:</p> <p>4 Q. Dr. Chee, in another prior lawsuit that</p> <p>5 Illumina was involved with, with Dr. Czarnik,</p> <p>6 Dr. Stuelpnagel testified that in the summer of 1998 you</p> <p>7 and he were the principal authors of a business plan for</p> <p>8 Illumina. Is that consistent with your recollection?</p> <p>9 MR. COSTAKOS: Objection. Form.</p> <p>10 THE WITNESS: I think so. I think Dr. Czarnik</p> <p>11 also contributed.</p> <p>12 BY MR. SHULMAN:</p> <p>13 Q. He did, indeed, according to Stuelpnagel, but</p> <p>14 more minorly than you and Stuelpnagel. Is that your</p> <p>15 recollection?</p> <p>16 MR. COSTAKOS: Objection. Form.</p> <p>17 THE WITNESS: I think that's probably the case.</p> <p>18 I -- I -- my impression now -- again, it's so long ago,</p> <p>19 it may not be entirely accurate -- was that the main</p> <p>20 contributor was -- was probably Dr. Stuelpnagel.</p> <p>21 MR. SHULMAN: Okay.</p> <p>22 THE WITNESS: And then -- and then myself and</p> <p style="text-align: right;">Page 72</p>
<p>1 THE WITNESS: I don't think we ever -- I don't</p> <p>2 think that's quite the right way to characterize it. I</p> <p>3 mean, I think you could make a 1536 device, but it would</p> <p>4 be -- it would be much, much more difficult to do. And I</p> <p>5 think we came to realize that -- that it wasn't worth the</p> <p>6 effort because we were so successful in parallelizing</p> <p>7 these assay -- the -- doing these assays that it was</p> <p>8 actually easier just to do more 96s than to try and put</p> <p>9 them all into 1536.</p> <p>10 MR. SHULMAN: Okay. Do you want to -- I'm</p> <p>11 happy to keep going, but if you want to take a break,</p> <p>12 we've been going an hour and 15 minutes, it's up to you.</p> <p>13 MR. COSTAKOS: It's really up to the witness.</p> <p>14 MR. SHULMAN: Really up to you.</p> <p>15 MR. COSTAKOS: What would you like to do,</p> <p>16 Dr. Chee?</p> <p>17 THE WITNESS: Sure, maybe a five-minute break?</p> <p>18 MR. SHULMAN: Yeah, yeah, sure.</p> <p>19 THE WITNESS: Thanks.</p> <p>20 VIDEOGRAPHER: Please remove your microphones.</p> <p>21 We're off the record at 10:15 a m.</p> <p>22 (Recess.)</p> <p style="text-align: right;">Page 71</p>	<p>1 Dr. Czarnik probably in that order.</p> <p>2 MR. SHULMAN: Let me ask the reporter to please</p> <p>3 mark as Exhibit 5 a copy of a business plan produced by</p> <p>4 Illumina bearing production Nos. ILL 2962603 through</p> <p>5 2636.</p> <p>6 (Exhibit 5 was marked.)</p> <p>7 BY MR. SHULMAN:</p> <p>8 Q. Again, I'm not going to condemn you to read the</p> <p>9 whole thing, but could you glance through it and tell me</p> <p>10 whether you recognize this as a copy of a business plan</p> <p>11 that you, Stuelpnagel, and Czarnik prepared in the summer</p> <p>12 of '98.</p> <p>13 MR. COSTAKOS: Objection. Form.</p> <p>14 MR. SHULMAN: I can help you date this, if</p> <p>15 you'd like.</p> <p>16 THE WITNESS: Yes.</p> <p>17 BY MR. SHULMAN:</p> <p>18 Q. If you'd look at the second page of the</p> <p>19 document, the first paragraph up at the top of the page,</p> <p>20 it talks about the Series A or the -- that you're</p> <p>21 currently seeking Series B financing.</p> <p>22 A. Series B financing, yes.</p> <p style="text-align: right;">Page 73</p>

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<p>1 Q. So that pretty much targets it in the mid 1998 2 time frame. Is that correct? 3 A. I think that's correct, yes. 4 Let's see. This -- this looks like the 5 business plan to me, yes. 6 Q. Okay. Could you turn, please, to -- let me see 7 if I can find it. Yeah. Page that ends with 2624. 8 A. Okay. 9 Q. And do you see a section beginning on that page 10 entitled "intellectual property"? 11 A. Yes. 12 Q. And that continues through the top of 13 page 2626? 14 A. 2626, yes. 15 Q. Can you tell me who wrote this section? 16 A. I'm not sure I'll be able to, but I'll -- 17 I'll -- I'll have a look through it and -- 18 Q. Sure. 19 A. -- make an effort. 20 MR. COSTAKOS: I'm going to interpose an 21 objection here. I think that we've produced other 22 documents, other versions of this, that had at least some</p> <p style="text-align: right;">Page 74</p>	<p>1 MR. SHULMAN: Okay. 2 THE WITNESS: You know, I -- again, I can't say 3 definitively because I just don't have a recollection, 4 but looking at the content, I'm almost certain that John 5 Stuelpnagel would have written this. 6 BY MR. SHULMAN: 7 Q. Okay. It wasn't you? 8 A. I'm pretty sure it wasn't me. There's a pretty 9 good chance I edited it. You know, I might have -- 10 Q. Fair enough. 11 A. -- corrected a few spellings errors and things 12 like that, although John is really -- doesn't make many 13 of those. 14 Q. Let's switch subjects. 15 Do you know a man by the name of Dr. Gregory 16 Kirk? 17 A. Gregory Kirk. Yes, I -- I think I -- I hope 18 I'm recalling the right person, but I think so, yes. 19 Q. Okay. And how did you come to know Dr. Kirk? 20 A. I don't recall. 21 Q. Was it in connection with events leading up to 22 your joining Illumina?</p> <p style="text-align: right;">Page 76</p>
<p>1 of this redacted, and so -- 2 MR. SHULMAN: You did? 3 MR. COSTAKOS: Yeah. And so this may have been 4 something that was inadvertently produced. 5 MR. SHULMAN: You wrote us a long letter, and 6 this document, as well as several other copies of this 7 letter, without any redactions, was not identified in the 8 letter. 9 BY MR. SHULMAN: 10 Q. But, anyway, who wrote this section? 11 MR. COSTAKOS: Well, I'm going to object to any 12 questions on this. Let me just look into this, and if 13 you don't mind, we can come back to it. Would you be -- 14 is that okay? Because I don't know whether this was 15 inadvertently produced or not, honestly. I don't have in 16 mind all 3 million pages that we produced and what was -- 17 MR. SHULMAN: Well, let me suggest this, 18 that -- my only question is, who wrote this. Why don't 19 we get an answer. 20 If it was inadvertently produced, then we can 21 deal with striking the answer then. 22 MR. COSTAKOS: Fair enough.</p> <p style="text-align: right;">Page 75</p>	<p>1 A. I -- if it's -- if it's the person I'm thinking 2 of, it was in association with Illumina. I don't recall 3 how -- how I was first introduced to him, whether it 4 was -- I just don't recall. I think it's -- it's 5 possible it may have been through Dr. Stuelpnagel, 6 Dr. Auger, possibly even someone else. I just don't 7 remember. 8 Q. Okay. Did you ever meet him face to face? 9 MR. COSTAKOS: Objection. Form, foundation. 10 THE WITNESS: I think I did meet him once face 11 to face. 12 BY MR. SHULMAN: 13 Q. And where was that meeting? 14 A. I think -- 15 MR. COSTAKOS: Same objections, by the way. 16 THE WITNESS: -- it was -- I think I met him in 17 Boston, actually. I think it might have been, I want to 18 say, at -- at Millennium Pharmaceuticals, but I might be 19 wrong about that. 20 BY MR. SHULMAN: 21 Q. Yeah, he joined Millennium in roughly May of 22 1998, I believe.</p> <p style="text-align: right;">Page 77</p>

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<p>1 Do you recall attending a meeting at Millennium</p> <p>2 where he was present?</p> <p>3 A. I don't recall that. I'm pretty sure I met him</p> <p>4 at Millennium. I don't recall if it's in the context of</p> <p>5 a meeting or whether it was as a -- as a separate, you</p> <p>6 know, meeting with him.</p> <p>7 Q. Did he participate in some discussion or</p> <p>8 meeting that you had when you met him?</p> <p>9 MR. COSTAKOS: Objection. Form.</p> <p>10 THE WITNESS: I wish I could remember. What</p> <p>11 I -- what I -- what I think I remember is that -- is a --</p> <p>12 is sort of a one-on-one, you know, sort of more casual</p> <p>13 conversation with him. There may have been a -- some</p> <p>14 formal meeting. I don't remember that.</p> <p>15 BY MR. SHULMAN:</p> <p>16 Q. Okay. And what did you and Dr. Kirk speak</p> <p>17 about when you had this informal one-on-one meeting with</p> <p>18 him?</p> <p>19 A. I think -- we certainly talked about Illumina</p> <p>20 or -- but -- but I don't -- I don't recall exactly what.</p> <p>21 I want -- I want to say that it was -- it was to do</p> <p>22 with -- I want to say that it was to do with some</p> <p style="text-align: right;">Page 78</p>	<p>1 A. Certainly, sure, if you have --</p> <p>2 Q. Is there anything you could think of --</p> <p>3 A. Oh.</p> <p>4 Q. -- that I could show you?</p> <p>5 A. Well, I tend to be pretty bad on dates, but if</p> <p>6 somebody shows me, you know, an email with a date on it,</p> <p>7 I -- it doesn't necessarily recollect -- refresh my</p> <p>8 recollection. It just allows me to say, oh, there's an</p> <p>9 objective piece of data that means that must have been</p> <p>10 the date.</p> <p>11 Q. Okay. Did you know that during the first five</p> <p>12 months of 1998, namely, January through some period in</p> <p>13 May, Dr. Stuelpnagel was trying to recruit Kirk to join</p> <p>14 Illumina after it was formed?</p> <p>15 A. That -- that sounds right to me. I think he --</p> <p>16 I think he may well have been trying to do that. Let me</p> <p>17 think. Let me think.</p> <p>18 I think we were trying to fill a position that</p> <p>19 was -- I want to say this was a position that was</p> <p>20 ultimately filled by Rich Petelewski, and it was to do</p> <p>21 with, the best I can recollect now, sort of operations, I</p> <p>22 would say, operations and manufacturing related, or</p> <p style="text-align: right;">Page 80</p>
<p>1 approach to -- to decoding these arrays that -- that --</p> <p>2 that he -- he had come up with.</p> <p>3 Q. And how do you know that he had come up with an</p> <p>4 approach -- how did you know, rather, that he had come up</p> <p>5 with an approach for decoding these arrays?</p> <p>6 A. I don't recall. It could have been through</p> <p>7 Dr. Stuelpnagel. It could have been -- I just don't -- I</p> <p>8 just don't recall the initial connection.</p> <p>9 Q. Okay. This meeting that you had with Dr. Kirk,</p> <p>10 this one-on-one informal meeting, was that in the first</p> <p>11 half of 1998?</p> <p>12 A. I couldn't be sure.</p> <p>13 MR. COSTAKOS: Objection. Form.</p> <p>14 BY MR. SHULMAN:</p> <p>15 Q. Was it before you joined Illumina?</p> <p>16 A. Couldn't be sure.</p> <p>17 Q. Is there anything that -- I heard a noise. I</p> <p>18 don't know. Maybe it's just my ears buzzing.</p> <p>19 A. Something buzzing.</p> <p>20 Q. Is there anything I could show you to try and</p> <p>21 refresh your recollection about when this meeting with</p> <p>22 Dr. Kirk occurred?</p> <p style="text-align: right;">Page 79</p>	<p>1 engineering, you know, the aspects around manufacturing</p> <p>2 our devices and polishing and etching the bundles.</p> <p>3 And I want to say that we considered a number</p> <p>4 of different candidates, and there -- and I think they</p> <p>5 were -- they were probably -- certainly, most of them, I</p> <p>6 think, were -- were identified -- and I don't recall</p> <p>7 exactly how -- by Dr. Stuelpnagel. I think. Possibly</p> <p>8 through recommendations from other people. And I want to</p> <p>9 say Greg Kirk was one of those candidates.</p> <p>10 Q. Okay. Did you participate in any way in the</p> <p>11 effort to -- I don't mean to be pejorative -- but lure</p> <p>12 Kirk into coming to Illumina?</p> <p>13 MR. COSTAKOS: Objection. Form.</p> <p>14 THE WITNESS: I don't think "lure" is quite the</p> <p>15 right word.</p> <p>16 BY MR. SHULMAN:</p> <p>17 Q. Recruiting him?</p> <p>18 A. Recruiting him.</p> <p>19 You know, I think -- actually, I'd completely</p> <p>20 forgotten about that position. And, you know, I think we</p> <p>21 did consider several candidates there, but now that you</p> <p>22 mention it, I don't -- I think -- I recall being involved</p> <p style="text-align: right;">Page 81</p>

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<p>1 in evaluating some -- to go back to your earlier 2 question -- evaluating some of those candidates. I don't 3 recall whether I was actively trying to recruit Greg Kirk 4 to Illumina. 5 Q. Okay. Do you recall evaluating Dr. Kirk as a 6 potential employee for Illumina? 7 A. Not in the specifics, no, but I -- I have a 8 general impression in my mind that I -- I was sort of -- 9 sort of favorably inclined, but I don't -- I don't recall 10 the specifics of.. 11 Q. Did you discuss the possibility of Kirk joining 12 Illumina with Dr. Stuelpnagel? 13 MR. COSTAKOS: Objection. Foundation. 14 THE WITNESS: I don't recall. I'm -- I'm 15 pretty sure I did have such a discussion. I'm convinced 16 I had such a discussion, but I don't recollect it. 17 MR. SHULMAN: Okay. Let me show you some 18 emails that may or may not trigger some recollections 19 about this. 20 Let's first mark as Exhibit 6 an email from 21 Dr. Kirk to Dr. Stuelpnagel dated January 7, 1998, to 22 which he attached his CV.</p> <p style="text-align: right;">Page 82</p>	<p>1 couple of discussions going on now with -- about 2 Dr. Kirk. 3 I think one was -- I think one was about 4 recruiting, about filling -- suitability for this 5 position. 6 Q. Right. 7 A. And I recall now I think there was -- there was 8 a second discussion going on with Dr. Stuelpnagel 9 about -- about what he mentions here, clear ideas 10 regarding coding/decoding schemes. 11 So I guess as a result of perhaps this 12 presen- -- I don't know. 13 As a result of some understanding he gained 14 about the technology, he came up with ideas about, as he 15 says here, encoding/decoding. And there was some 16 discussion about whether those added anything new to what 17 we had, whether they were a good fit, whether we wanted 18 to bring them into the company somehow. 19 Q. Okay. In this -- in the first few months of 20 1998, did you discuss with Dr. Stuelpnagel the 21 encoding/decoding ideas that Dr. Kirk came up with? 22 MR. COSTAKOS: Objection. Form, foundation.</p> <p style="text-align: right;">Page 84</p>
<p>1 (Exhibit 6 was marked.) 2 BY MR. SHULMAN: 3 Q. If you could just read this to yourself, 4 please, just the email. You don't have to look at the 5 CV, unless you want to. 6 A. Okay. 7 Q. Do you recall IntelliSense was the preliminary 8 name for Illumina? 9 A. I recall something like that. I recall 10 thinking it was a horrible name. 11 Q. And do you see the reference to IntelliSense in 12 this email? 13 A. Yes, I do. 14 Q. And Dr. Stuelpnagel testified that this 15 discussion that's referred to in the first sentence took 16 place at the Newark airport, which is abbreviated by EWR. 17 A. I see that. 18 Q. Does this email refresh any recollection about 19 discussions you may have had with Stuelpnagel about 20 Dr. Kirk? 21 A. Not specifically, but I -- I -- I do recollect 22 now that, you know, I think there were -- there were a</p> <p style="text-align: right;">Page 83</p>	<p>1 THE WITNESS: I'm -- yeah, I -- I don't -- I 2 don't remember the exact time frame, but based on this 3 email, I would say that -- I remember having some sort of 4 discussion with Dr. Stuelpnagel about that, and I would 5 imagine it was -- it was in that time frame given the 6 date on this email. 7 BY MR. SHULMAN: 8 Q. Okay. When did you start giving thought to 9 encoding and decoding ideas for the arrays? 10 A. So I -- I do remember that because -- I 11 remember that at the very initial meeting that I had that 12 we discussed earlier at Printers Inc., that when they 13 showed me the -- the technology, as they were showing it 14 to me, I -- I had an idea of how -- how one might do 15 this. And then I think I just sort of developed that 16 subsequently over -- over the next -- next -- I want to 17 say I think it was maybe just the next few days. 18 Q. Okay. And what was the idea that you developed 19 after this -- or during this meeting at Printers Inc.? 20 A. It was actually during the meeting. They were 21 showing it to me, and they were explaining how these 22 beads could be encoded with dyes. And because of my</p> <p style="text-align: right;">Page 85</p>

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1 background, my interest -- my interest was in being able
2 to -- you know, very large numbers of assays. I was very
3 interested in this space of sort of analyzing the whole
4 genome, genotyping people at high resolution, and I had
5 been, when I was talking Caliper, looking for
6 technologies that would do that.

7 I was concerned that their decoding approach
8 using dyes and mixtures of dyes would not allow more than
9 a relatively small number of different -- different
10 assays to be carried out.

11 And it just occurred to me when they were
12 talking that one could hybridize fluorescent DNA
13 molecules that were already known, already known
14 sequence, and use that to gain information about DNA
15 sequences, which DNA sequences were on which beads.

16 And I don't think I had worked out, because I
17 was listening to the presentation, the -- the exact
18 detail, but I think already I -- I -- I realized that
19 there -- there must be some combinatorial way of doing
20 this sequentially that would allow you to decode
21 thousands and, perhaps, you know, even much larger
22 numbers of these beads. And then subsequently, I -- I

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1 sort of worked out the specifics of how one would do
2 that.

3 Q. Okay. And when you say subsequently, what
4 period of time are you referring to?

5 A. You know, I don't recall exactly, but I want to
6 say it was within the next few days. And, again, the
7 general conception of the approach I had during the
8 meeting. And then in the next few days, I think I
9 figured out specifics.

10 Q. Are there any written records that you're aware
11 of that exist today that memorialize this
12 encoding/decoding idea that you worked out at the
13 Printers Inc. in the few days following that meeting?

14 A. Not -- not in that period. I mean, they got
15 off very lightly in a sense that, you know, I -- I did --
16 you know, I've -- I did not have much of a background
17 in -- as a scientist, I tended to invent things, do
18 things, and not focus so much on -- on sort of
19 documentation for patenting and so on.

20 And so I was under no obligation to them. I
21 certainly could have documented it and -- but I felt that
22 that would have been unkind to them to invent something

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1 on top of them and sort of block them, you know.

2 Q. Whatever the motives were, I'm just asking, is
3 there any documentation that exists today --

4 A. No.

5 Q. -- that you can point to to show us that on
6 such and such a date, you thought of this decoding idea
7 that you just described?

8 A. No.

9 MR. COSTAKOS: Objection. Foundation.

10 BY MR. SHULMAN:

11 Q. Okay.

12 A. No.

13 I did disclose at some point -- I don't
14 remember exactly when -- to Dr. Stuelpnagel, you know, in
15 the context -- I said, "This is something I came up
16 with," you know. I really wanted to -- because I came up
17 with the idea, I could see a path to -- to doing the
18 things I wanted to do with this platform.

19 And so, you know, I suggest we combine forces,
20 that nGenetics be -- I think he may have proposed a
21 simple mechanism of acquiring the assets of the company
22 and then we would -- we would -- this -- this idea that I

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1 had would become property of Illumina.

2 MR. SHULMAN: Okay. Let's mark as Exhibit 7
3 another email, this one from Dr. Stuelpnagel to Dr. Kirk
4 dated January 8, 1998.

5 (Exhibit 7 was marked.)

6 BY MR. SHULMAN:

7 Q. Again, if you'd look at this brief email, and
8 you'll see it's a response to Exhibit 6.

9 A. January 7, January 8. Yup.

10 Q. Do you recall considering Nancy Gray, the woman
11 who Greg Kirk had recommended for consideration, for
12 employment by Illumina?

13 MR. COSTAKOS: Objection. Form, assumes facts.

14 THE WITNESS: I don't -- I -- I don't recall
15 anything about Nancy Gray at all.

16 MR. SHULMAN: Okay. Let me mark as Exhibit 8
17 another email, this one dated January 9, 1998, from
18 Dr. Kirk to Dr. Stuelpnagel.

19 (Exhibit 8 was marked.)

20 BY MR. SHULMAN:

21 Q. And you see at the top of this document, you
22 have the original email that's contained in Exhibit 7 and

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<p>1 then the reply beneath that. Do you see that?</p> <p>2 A. Yes.</p> <p>3 Q. Okay. And in the reply, Dr. Kirk wrote that he</p> <p>4 was looking forward to going over progress in the future</p> <p>5 and that, unfortunately, Nancy Gray was no longer in the</p> <p>6 running. And finally, he reported, quote, "I am still</p> <p>7 thinking about encoding/decoding strategies both from a</p> <p>8 collaboration existing IP viewpoint and with respect to</p> <p>9 brand new ideas." Do you see that?</p> <p>10 A. Yes, I do.</p> <p>11 Q. Does that refresh your recollection at all</p> <p>12 about learning of Dr. Kirk's encoding/decoding ideas?</p> <p>13 MR. COSTAKOS: Objection. Form.</p> <p>14 THE WITNESS: I know that specifically does,</p> <p>15 but -- but since you showed me this earlier document,</p> <p>16 I've been trying to think what's -- what the idea was.</p> <p>17 And I think I remember that it -- I'm pretty</p> <p>18 sure it also involved hybridization of DNA for decoding</p> <p>19 purposes, but I think it was -- basically his idea was</p> <p>20 sort of a -- use a collection of shorter DNA sequences</p> <p>21 that was less specific and would result in some -- I may</p> <p>22 not be representing it correctly now. It's so long, I</p> <p style="text-align: right;">Page 90</p>	<p>1 MR. SHULMAN: I mean the first four or five</p> <p>2 months of 1998.</p> <p>3 MR. COSTAKOS: Objection. Form, foundation</p> <p>4 THE WITNESS: I'm pretty sure now with these</p> <p>5 emails that I -- I probably first interacted with</p> <p>6 Dr. Kirk as a result of, you know, the connection through</p> <p>7 John Stuelpnagel. So I'm pretty sure it's very unlikely</p> <p>8 to be before this period.</p> <p>9 So I -- I think it's probably within a small</p> <p>10 number of months of this period. Very unlikely be before</p> <p>11 he first interacted with John Stuelpnagel.</p> <p>12 ///</p> <p>13 BY MR. SHULMAN:</p> <p>14 Q. Okay. And how did you learn about the --</p> <p>15 whatever specific knowledge you had of Kirk's ideas --</p> <p>16 MR. COSTAKOS: Objection. Form.</p> <p>17 BY MR. SHULMAN:</p> <p>18 Q. -- on decoding?</p> <p>19 A. I don't remember. It would have been either --</p> <p>20 I can only assume -- and I think this is likely -- that</p> <p>21 it would either have been something that Greg Kirk sent</p> <p>22 to John Stuelpnagel and relayed to me, or he may have</p> <p style="text-align: right;">Page 92</p>
<p>1 don't remember.</p> <p>2 But I think it was -- I think we had some</p> <p>3 concern about sort of specificity. It was more of an</p> <p>4 analog type of readout. The concept I had was, in</p> <p>5 essence, a digital readout. And I could -- I could and</p> <p>6 did argue that that would be highly specific even before</p> <p>7 we did any experiments.</p> <p>8 And this, I think, I -- I think I recall having</p> <p>9 the concern -- and I -- and I don't know if it was just</p> <p>10 me or other people -- that this could be a messy kind of</p> <p>11 a readout. Unclear whether it would work or how well it</p> <p>12 would work.</p> <p>13 BY MR. SHULMAN:</p> <p>14 Q. Okay. And the differences that you just</p> <p>15 described between his idea and what you were thinking</p> <p>16 about, you recognized those in the time frame of these</p> <p>17 emails that we've been looking at, Exhibit 6, 7, and 8?</p> <p>18 MR. COSTAKOS: Objection. Form.</p> <p>19 THE WITNESS: Oh, I couldn't -- there's -- I</p> <p>20 have no way of pinning them down to this exact time</p> <p>21 frame, but I -- but I -- if by that you mean these</p> <p>22 dates --</p> <p style="text-align: right;">Page 91</p>	<p>1 communicated it to both of us directly.</p> <p>2 (Exhibit 9 was marked.)</p> <p>3 BY MR. SHULMAN:</p> <p>4 Q. Okay. Let's go to the next exhibit, which is</p> <p>5 Exhibit 9. It's a January 12 letter from Kirk to</p> <p>6 Stuelpnagel in the year 1998. Again, it's a short</p> <p>7 letter. If you could just, please, look at it.</p> <p>8 And he told Dr. Stuelpnagel at the time, he,</p> <p>9 Kirk, that "I would like to review encoding/decoding</p> <p>10 patents and report back to you." Do you see that?</p> <p>11 A. Yes.</p> <p>12 Q. And he also said that, quote, "Enclosed is a</p> <p>13 paper drafted from an IBC talk I gave in August '97 in</p> <p>14 San Diego." Do you see that?</p> <p>15 A. Yes.</p> <p>16 Q. Do you recall reading a paper of Dr. Kirk's</p> <p>17 that he sent to Dr. Stuelpnagel?</p> <p>18 A. I'm sorry. I don't at this time.</p> <p>19 (Exhibit 10 was marked.)</p> <p>20 BY MR. SHULMAN:</p> <p>21 Q. Okay. Now let's look at what we'll mark as</p> <p>22 Exhibit 10, which is a January 20, 1998, email from</p> <p style="text-align: right;">Page 93</p>

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<p>1 Dr. Stuelpnagel to Dr. Kirk.</p> <p>2 If you could read this short email as well,</p> <p>3 please.</p> <p>4 A. I've read it.</p> <p>5 Q. Okay. And in here Dr. Stuelpnagel reported</p> <p>6 that the negotiations with the university were going</p> <p>7 well. Do you see that?</p> <p>8 A. Yes.</p> <p>9 Q. And that was Tufts University for whom you were</p> <p>10 negotiating a license at the time?</p> <p>11 A. That's correct.</p> <p>12 MR. COSTAKOS: Objection. Calls for</p> <p>13 speculation about the exhibit.</p> <p>14 THE WITNESS: I'm pretty sure that's right.</p> <p>15 Pretty sure it was Tufts.</p> <p>16 BY MR. SHULMAN:</p> <p>17 Q. You were aware that Dr. Stuelpnagel was</p> <p>18 negotiating with Tufts in this time frame?</p> <p>19 A. I was.</p> <p>20 Q. And he -- he, Dr. Stuelpnagel, tells Dr. Kirk</p> <p>21 that when the negotiations are complete, he would like to</p> <p>22 get Kirk together with Walt. Do you see that?</p> <p style="text-align: right;">Page 94</p>	<p>1 list?"</p> <p>2 Do you see that?</p> <p>3 A. Yes.</p> <p>4 Q. When did you disclose to Stuelpnagel your idea</p> <p>5 about the optical codes?</p> <p>6 A. It was -- I don't remember the dates. I can</p> <p>7 tell you when it was bounded by.</p> <p>8 I think -- I think -- I'm fairly sure that I</p> <p>9 waited till after visiting David Walt at Tufts because I</p> <p>10 wanted to see that this technology -- I -- working in the</p> <p>11 lab and so on, you know, I wanted to get my own sense of</p> <p>12 whether this technology was -- was -- was suitable for</p> <p>13 the things I wanted to do with it.</p> <p>14 So I really, you know, didn't want to rely on</p> <p>15 this PowerPoint presentation. I wanted to see whether</p> <p>16 these beads really did assemble spontaneously into wells</p> <p>17 and things like that.</p> <p>18 So I think I was deferring any -- I'm not a</p> <p>19 hundred percent sure about this, but I'm pretty sure I</p> <p>20 deferred that discussion till after visiting David Walt.</p> <p>21 So I think almost certainly I could not have</p> <p>22 had the discussion before we met at Printers Inc. because</p> <p style="text-align: right;">Page 96</p>
<p>1 A. Yes.</p> <p>2 Q. Did you have an understanding at the time as to</p> <p>3 why Stuelpnagel wanted to get Kirk together with Walt?</p> <p>4 MR. COSTAKOS: Objection. Form.</p> <p>5 THE WITNESS: I mean, I don't recollect</p> <p>6 certainly at the time. I can tell you, looking at it</p> <p>7 here, I would -- in this context of emails, I would</p> <p>8 assume he wanted David Walt's opinion on whether Greg</p> <p>9 Kirk would be a suitable employee.</p> <p>10 BY MR. SHULMAN:</p> <p>11 Q. Okay. Do you recall hearing from Dr. Walt or</p> <p>12 hearing about what Dr. Walt's thoughts were about the</p> <p>13 suitability of Kirk?</p> <p>14 A. I don't recall.</p> <p>15 Q. Okay. And he goes on in this email,</p> <p>16 Exhibit 10, Dr. Stuelpnagel does, to state that, "In</p> <p>17 addition, I'm still looking for solutions to increase the</p> <p>18 number of optical codes. Do you have any more thoughts?</p> <p>19 Are there academic labs that are working on this problem?</p> <p>20 And finally I'm starting to assemble a short list of</p> <p>21 potential scientific advisory board members. Do you have</p> <p>22 any people that you think should be included on the</p> <p style="text-align: right;">Page 95</p>	<p>1 that's when I came up with the idea. I'm -- I'm at least</p> <p>2 90 percent sure that I didn't have the discussion till</p> <p>3 after visiting Walt's lab because that was -- at that</p> <p>4 point in my mind, I thought, Oh, yes, you know, this</p> <p>5 really is the right platform for -- for -- for these</p> <p>6 assays.</p> <p>7 Q. Okay.</p> <p>8 A. And then -- and then on the other end, it -- I</p> <p>9 think it is certainly bounded by the acquiring of</p> <p>10 nGenetics' assets by Illumina. I think that bounds it.</p> <p>11 When those dates are, I can't quite remember. I'm sorry.</p> <p>12 Q. Okay. And the visit to Dr. Walt's lab that</p> <p>13 you're referring to in your prior answer was this May</p> <p>14 visit that we looked at earlier. Correct?</p> <p>15 MR. COSTAKOS: Objection. Mischaracterizes.</p> <p>16 THE WITNESS: I couldn't be sure because I have</p> <p>17 a clear recollection of the visit, but I can't remember</p> <p>18 if I -- I know I went to David Walt's lab more than once.</p> <p>19 you know, at a later date. So I couldn't be a hundred</p> <p>20 percent sure that this May visit is the visit I'm</p> <p>21 thinking of.</p> <p>22 BY MR. SHULMAN:</p> <p style="text-align: right;">Page 97</p>

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<p>1 Q. But it must have been --</p> <p>2 A. Probably was.</p> <p>3 Q. It must have been at least as late as May and</p> <p>4 perhaps later because the May visit, as you testified in</p> <p>5 the last lawsuit, was the first time you visited his lab?</p> <p>6 MR. COSTAKOS: Objection. Form,</p> <p>7 mischaracterizes.</p> <p>8 THE WITNESS: If, in fact, I was correct there,</p> <p>9 which I assume I must have been because I said yes, that</p> <p>10 was the first visit, then it must have been May or later,</p> <p>11 yes.</p> <p>12 BY MR. SHULMAN:</p> <p>13 Q. Okay.</p> <p>14 A. Well, I would say it's -- it -- it must have</p> <p>15 been after I met with John Stuelpnagel and Larry Bock at</p> <p>16 Printers Inc. And it was most probably -- I would say</p> <p>17 I'm about 90 percent sure it was after that visit to</p> <p>18 David Walt.</p> <p>19 Q. Okay. Now, did there come a point in time when</p> <p>20 Dr. Kirk made the decision to remain on the east coast</p> <p>21 and not join Illumina?</p> <p>22 MR. COSTAKOS: Objection. Foundation.</p> <p style="text-align: right;">Page 98</p>	<p>1 Q. And Stuelpnagel reports here in Exhibit 11 --</p> <p>2 or he asks, "Have you been able to give any thoughts to</p> <p>3 alternative VP engineering/product development candidates</p> <p>4 for Illumina?"</p> <p>5 Do you see that?</p> <p>6 A. I see that.</p> <p>7 Q. Does that refresh your recollection that Kirk</p> <p>8 was being considered for that position?</p> <p>9 A. It's consistent with what I said earlier, which</p> <p>10 was that I'm pretty sure that that was the position.</p> <p>11 The -- I had stated it, I think, as sort of operations,</p> <p>12 manufacturing, engineering, yes, so...</p> <p>13 Q. Okay. Do you have any information about why it</p> <p>14 is that Dr. Stuelpnagel was disappointed that Kirk was</p> <p>15 unable to join Illumina?</p> <p>16 MR. COSTAKOS: Objection. Form, foundation.</p> <p>17 THE WITNESS: I -- one can infer from this</p> <p>18 statement that -- one of two things I would infer. One</p> <p>19 is that perhaps we really did want to have Greg Kirk fill</p> <p>20 this role, or -- or were very seriously considering him.</p> <p>21 BY MR. SHULMAN:</p> <p>22 Q. Right.</p> <p style="text-align: right;">Page 100</p>
<p>1 THE WITNESS: I honestly -- I can't recall</p> <p>2 whether he made a decision not to join Illumina or -- or</p> <p>3 we made a decision not to offer him a position. I simply</p> <p>4 don't recall.</p> <p>5 (Exhibit 11 was marked.)</p> <p>6 BY MR. SHULMAN:</p> <p>7 Q. Okay. Let me mark as Exhibit 11 another short</p> <p>8 email dated May 4, 1998, from Stuelpnagel to Kirk.</p> <p>9 A. So this seems to make it pretty clear that Greg</p> <p>10 Kirk decided to join Millennium.</p> <p>11 Q. And remain on the east coast?</p> <p>12 A. And remain on the east coast.</p> <p>13 Q. Does that refresh your recollection about the</p> <p>14 event?</p> <p>15 MR. COSTAKOS: Objection. Form.</p> <p>16 THE WITNESS: It doesn't specifically. It</p> <p>17 allows me to draw a conclusion based on the email, but it</p> <p>18 doesn't at the moment --</p> <p>19 BY MR. SHULMAN:</p> <p>20 Q. Okay.</p> <p>21 A. -- help me recollect any discussions we may</p> <p>22 have had about that.</p> <p style="text-align: right;">Page 99</p>	<p>1 A. Or, you know, I think sometimes -- but I don't</p> <p>2 think you can conclude that from this.</p> <p>3 I think, you know, sometimes people can also</p> <p>4 want to be positive and say, "Well," you know, "we would</p> <p>5 have loved to have had you," whether -- if he's joining</p> <p>6 Millennium, then it's sort of moot anyway. So it just</p> <p>7 may have been a nice response.</p> <p>8 Q. Okay. Just briefly, we have two minutes before</p> <p>9 the tape has to be changed.</p> <p>10 Dr. Stuelpnagel -- blah -- Dr. Stuelpnagel --</p> <p>11 that's a mouthful sometimes -- testified that he was</p> <p>12 disappointed because he thought Kirk could have been a</p> <p>13 valuable contributor to the Illumina team.</p> <p>14 Did you have any views about Kirk's value as a</p> <p>15 potential member of the Illumina team back in the spring</p> <p>16 of 1998?</p> <p>17 MR. COSTAKOS: Objection. Form --</p> <p>18 THE WITNESS: I think I already --</p> <p>19 MR. COSTAKOS: -- foundation.</p> <p>20 THE WITNESS: I think I said earlier that I</p> <p>21 have this -- this vague recollection, by no means a</p> <p>22 certainty, that I was positively inclined to having him</p> <p style="text-align: right;">Page 101</p>

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<p>1 join the team.</p> <p>2 MR. SHULMAN: Okay.</p> <p>3 THE WITNESS: We got into that earlier.</p> <p>4 BY MR. SHULMAN:</p> <p>5 Q. And that was based upon what, sir?</p> <p>6 A. I couldn't even say. Just a vague recollection</p> <p>7 in my mind that -- that I have this association that --</p> <p>8 that I was positively inclined. And I could even be</p> <p>9 wrong about that.</p> <p>10 MR. SHULMAN: Okay. We need to take a break so</p> <p>11 he can change the tape.</p> <p>12 VIDEOGRAPHER: This is the end of disk No. 1 of</p> <p>13 Volume I. We're off the record at 11:07 a.m.</p> <p>14 (Recess.)</p> <p>15 VIDEOGRAPHER: This is the beginning of disk</p> <p>16 No. 2 of Volume I. We're on the record at 11:14 a.m.</p> <p>17 ///</p> <p>18 BY MR. SHULMAN:</p> <p>19 Q. If you'd look again, please, at Exhibit 10,</p> <p>20 which is the January 20 email, and at the end of the</p> <p>21 first paragraph, Stuelpnagel told Kirk that he wants to</p> <p>22 get Kirk together with Walt when negotiations were</p> <p style="text-align: right;">Page 102</p>	<p>1 1998, email from Dr. Kirk to Larry Bock and</p> <p>2 Dr. Stuelpnagel entitled "Feedback from Thursday meeting</p> <p>3 at Tufts."</p> <p>4 And, unfortunately, unlike all the other</p> <p>5 emails, this is rather lengthy, but if you could take a</p> <p>6 moment to read through it.</p> <p>7 Have you had a chance to read through it?</p> <p>8 A. Yes.</p> <p>9 Q. Okay. Have you seen this email before?</p> <p>10 A. You know, I was just wondering that as I'm</p> <p>11 reading it because I -- I don't -- I don't recall seeing</p> <p>12 this email, but I certainly recall, in particular, I</p> <p>13 guess, his section 1B, and I don't know if it's because</p> <p>14 I've seen this email before and that's the bit that stuck</p> <p>15 in my mind or I've seen that separately from this email.</p> <p>16 Q. Okay. Now, you mentioned just before you read</p> <p>17 through this email that you recall having been apprised</p> <p>18 of Dr. Kirk's feedback in some form of document?</p> <p>19 A. Yes.</p> <p>20 Q. Is this the document?</p> <p>21 A. I don't recall. That's what I just answered.</p> <p>22 Q. Okay.</p> <p style="text-align: right;">Page 104</p>
<p>1 complete. Do you see that?</p> <p>2 A. Yes.</p> <p>3 Q. Do you know whether or not Kirk ever got</p> <p>4 together with Walt?</p> <p>5 A. I don't.</p> <p>6 Q. Did you ever see or hear about any feedback</p> <p>7 that Kirk provided about the Walt technology?</p> <p>8 A. I'm -- I recall seeing something. I don't</p> <p>9 recall the details, but I do recall seeing some -- I</p> <p>10 think it was -- I'm not a hundred percent sure, but I</p> <p>11 think it was some written document that he provided about</p> <p>12 his decoding idea.</p> <p>13 Q. Okay. Let me -- and when did you see that</p> <p>14 document?</p> <p>15 A. I really couldn't be sure, but I -- I would say</p> <p>16 it was likely to be in this time frame that we've already</p> <p>17 discussed.</p> <p>18 Q. Okay.</p> <p>19 A. The time frame of these emails.</p> <p>20 (Exhibit 12 was marked.)</p> <p>21 BY MR. SHULMAN:</p> <p>22 Q. Let me mark as Exhibit 12, I think, a March 9,</p> <p style="text-align: right;">Page 103</p>	<p>1 A. It could have been, but I'm not sure.</p> <p>2 Q. Do you recall whether you read this email back</p> <p>3 in 1998, the first half of 1998?</p> <p>4 MR. COSTAKOS: Objection. Form.</p> <p>5 THE WITNESS: I think I just answered that. I</p> <p>6 don't -- I don't recall.</p> <p>7 BY MR. SHULMAN:</p> <p>8 Q. Okay. One way or the other?</p> <p>9 A. Yeah, that's right. I -- I -- and, again, just</p> <p>10 to repeat my answer, I -- I recall the content. I recall</p> <p>11 seeing the content of 1B. I don't recall whether I saw</p> <p>12 it in this email and I've just forgotten everything else</p> <p>13 or -- you know, not have a good recollection or anything</p> <p>14 else or I saw it separately.</p> <p>15 Q. Okay.</p> <p>16 A. So I may well have seen this email or I may</p> <p>17 not. I just don't recall.</p> <p>18 Q. Okay.</p> <p>19 A. I do remember the content of 1B.</p> <p>20 Q. Did Dr. Stuelpnagel or Mr. Bock discuss this</p> <p>21 email with you in the first half of 1998?</p> <p>22 MR. COSTAKOS: Objection. Foundation.</p> <p style="text-align: right;">Page 105</p>

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<p>1 THE WITNESS: I don't recall.</p> <p>2 So something that would be helpful would be to</p> <p>3 know when the date was of my meeting with them at</p> <p>4 Printers Inc.</p> <p>5 BY MR. SHULMAN:</p> <p>6 Q. I can't help you there.</p> <p>7 A. Um --</p> <p>8 Q. I can give you -- I believe you testified in</p> <p>9 the last lawsuit that you thought it was in late 1997. I</p> <p>10 believe that's what you said.</p> <p>11 A. Okay.</p> <p>12 Q. I'm doing that from memory, but --</p> <p>13 A. Because I do have a recollection -- and so this</p> <p>14 is -- actually, it's sort of puzzling me a little bit</p> <p>15 right now about the dates because I do have a</p> <p>16 recollection that when I became aware of Dr. Kirk's</p> <p>17 scheme, whenever that was, that the scheme that I had</p> <p>18 come up with was -- had -- was already there. And so we</p> <p>19 were comparing this scheme to that.</p> <p>20 And so I'm a little bit puzzled because I see</p> <p>21 this date as March 9. And, apparently, I -- I was first</p> <p>22 in David Walt's lab in May, which -- which almost seems</p> <p style="text-align: right;">Page 106</p>	<p>1 I think, significantly after we were already routinely</p> <p>2 discussing the sequential decoding scheme that I came up</p> <p>3 with, but -- but now I'm wondering if I'm recollecting</p> <p>4 that correctly because that somehow seems like it's -- it</p> <p>5 may be out of order or I -- or another explanation is I</p> <p>6 did not see this email or I did not see it till -- till</p> <p>7 later.</p> <p>8 BY MR. SHULMAN:</p> <p>9 Q. Okay. Before I showed you this email today,</p> <p>10 have you ever seen it before, to your recollection?</p> <p>11 A. I think you're asking me the same question</p> <p>12 again.</p> <p>13 Q. I apologize if I asked it. I -- it's in my</p> <p>14 notes and --</p> <p>15 A. Okay. I don't know one way or the other. And</p> <p>16 the reason I can't say yes and I can't say no is because</p> <p>17 I do remember the content of 1B. So it's quite possible</p> <p>18 I'm remembering it because I saw this email and I'm just</p> <p>19 sort of forgetting.</p> <p>20 And I think I recall a little bit of, you</p> <p>21 know -- of -- of, perhaps, some of the other content, but</p> <p>22 I -- so my problem is that because I don't recall a lot</p> <p style="text-align: right;">Page 108</p>
<p>1 to me -- it seems right -- it seems -- it almost seems</p> <p>2 out of order, and I'm not sure why. I'm not recollecting</p> <p>3 why.</p> <p>4 Because it almost seems to me that if I did see</p> <p>5 this, I would have seen this before I discussed the other</p> <p>6 with John Stuelpnagel, and that's not my recollection.</p> <p>7 My recollection, which I guess could be wrong, is the</p> <p>8 other way around.</p> <p>9 Q. Okay. But in any event, you have no</p> <p>10 recollection of discussing this email or its content with</p> <p>11 either Stuelpnagel or Bock in the first half of '98?</p> <p>12 A. I have a recollection of discussing the content</p> <p>13 of 1B, this section at the top of page 2, with John</p> <p>14 Stuelpnagel. I do have a recollection of discussing</p> <p>15 that.</p> <p>16 I don't have a recollection of whether it was</p> <p>17 in the context of this email.</p> <p>18 Q. Okay. And when do you recall discussing the</p> <p>19 content of section 1B with Dr. Stuelpnagel?</p> <p>20 MR. COSTAKOS: Objection. Foundation.</p> <p>21 THE WITNESS: I don't recall exactly when. I</p> <p>22 don't. I mean, I -- I have in my mind that it is -- was,</p> <p style="text-align: right;">Page 107</p>	<p>1 of this stuff, I don't know if I saw this email,</p> <p>2 remembered bits of it, and forgot the rest, or I never</p> <p>3 saw this email and I saw the information elsewhere.</p> <p>4 Q. Okay. And what are the other bits in this</p> <p>5 email that you can now recall having learned about prior</p> <p>6 to today?</p> <p>7 MR. COSTAKOS: Objection. Form.</p> <p>8 THE WITNESS: Let me see what I have an</p> <p>9 impression of remembering.</p> <p>10 Not, I think, the first page.</p> <p>11 I don't -- okay. I should probably go through</p> <p>12 this more systematically.</p> <p>13 I don't remember anything about this section he</p> <p>14 has on the last page about PCOP, which must be</p> <p>15 Pharmacopeia, forming some sort of consortium. So I</p> <p>16 don't remember that.</p> <p>17 BY MR. SHULMAN:</p> <p>18 Q. The question was, what bits --</p> <p>19 A. Yeah, I know.</p> <p>20 Q. -- do you recall?</p> <p>21 A. So I'm trying -- I'm trying --</p> <p>22 MR. COSTAKOS: He's trying to answer that</p> <p style="text-align: right;">Page 109</p>

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<p>1 question.</p> <p>2 THE WITNESS: Let me -- let me do it more</p> <p>3 systematically from the top.</p> <p>4 BY MR. SHULMAN:</p> <p>5 Q. Sure. I suspect the list of what you do recall</p> <p>6 is shorter than the list of what you don't recall.</p> <p>7 MR. COSTAKOS: Could be.</p> <p>8 THE WITNESS: I -- I don't recall this whole</p> <p>9 thing about unstirred layers, which I think is pretty</p> <p>10 interesting. I -- pretty interesting thing. I have a</p> <p>11 feeling that's something I -- I should have remembered.</p> <p>12 I think it's 1A -- I think I -- sorry -- 1B.</p> <p>13 What's 1A again?</p> <p>14 I don't even remember 1A. I think I remember</p> <p>15 1B.</p> <p>16 And, you know, I'm not sure if it's -- if it's</p> <p>17 for this after-the-fact thing, but I think I remember 1C,</p> <p>18 that there was some discussion about sort of mass spec</p> <p>19 type of readout, like they were doing with their beads at</p> <p>20 Pharmacopeia.</p> <p>21 (Interruption by reporter.)</p> <p>22 THE WITNESS: I wish it was as interesting as</p> <p style="text-align: right;">Page 110</p>	<p>1 A. Yes.</p> <p>2 Q. And the eighth paragraph down.</p> <p>3 MR. COSTAKOS: Which paragraph?</p> <p>4 THE WITNESS: Which paragraph?</p> <p>5 MR. SHULMAN: The eighth paragraph. Not the</p> <p>6 number eight, but just count down eight paragraphs.</p> <p>7 THE WITNESS: Okay.</p> <p>8 MR. COSTAKOS: What does it start with?</p> <p>9 MR. SHULMAN: "First."</p> <p>10 MR. COSTAKOS: Okay.</p> <p>11 MR. SHULMAN: Right above the encoding/decoding</p> <p>12 section.</p> <p>13 BY MR. SHULMAN:</p> <p>14 Q. And there Dr. Kirk stated that he wanted to</p> <p>15 share some of his brainstorming ideas about the Walt</p> <p>16 technology that he had discussed with a scientific</p> <p>17 colleague over the weekend between the lab visit and the</p> <p>18 date of the email. Do you see that?</p> <p>19 A. Yes, I do.</p> <p>20 Q. So let's look at some of his ideas.</p> <p>21 If you look at the first page of the email, the</p> <p>22 paragraph that has the number three before it, do you see</p> <p style="text-align: right;">Page 112</p>
<p>1 bees, but it was just beads.</p> <p>2 BY MR. SHULMAN:</p> <p>3 Q. Anything else that you can recall having</p> <p>4 learned about apart from what you've identified?</p> <p>5 MR. COSTAKOS: Objection. Form.</p> <p>6 THE WITNESS: No.</p> <p>7 BY MR. SHULMAN:</p> <p>8 Q. Okay. Did you do anything to prepare for your</p> <p>9 deposition today?</p> <p>10 A. Nothing whatsoever.</p> <p>11 Q. Did you meet with counsel?</p> <p>12 A. No, I didn't.</p> <p>13 Q. And you weren't shown any documents?</p> <p>14 A. No, I wasn't shown any documents.</p> <p>15 Q. Okay. Apart from what is reported in this</p> <p>16 email, Exhibit 12, do you have any information about what</p> <p>17 transpired during Dr. Kirk's visit to the Walt lab in</p> <p>18 early March of 1998?</p> <p>19 A. I didn't even recollect that he'd -- if I even</p> <p>20 knew that he'd visited the Walt lab.</p> <p>21 Q. Okay. Could you look at page 1 of the March 9</p> <p>22 email, Exhibit 12.</p> <p style="text-align: right;">Page 111</p>	<p>1 that?</p> <p>2 A. Yes.</p> <p>3 Q. And there Dr. Kirk stated that "with this Walt</p> <p>4 technology, the detection methods can be massively</p> <p>5 parallel." Do you see that?</p> <p>6 A. Yes.</p> <p>7 Q. And then in the second sentence, he explained</p> <p>8 what he meant by "massively parallel" when he stated</p> <p>9 that, quote, "for instance, 1536 fiber bundles with up to</p> <p>10 6,000 tests can be fixtured to perform simultaneous</p> <p>11 testing of all wells in our new 1536 microliter well</p> <p>12 plates, exclamation point."</p> <p>13 A. Yes.</p> <p>14 Q. Do you see that?</p> <p>15 A. I see that.</p> <p>16 MR. COSTAKOS: Objection. Characterization.</p> <p>17 BY MR. SHULMAN:</p> <p>18 Q. And in the sentence I just read, he, Dr. Kirk,</p> <p>19 emphasized the testing can be done simultaneously in all</p> <p>20 wells by typing the word "all" in capital letters and</p> <p>21 using an exclamation point at the end of the sentence.</p> <p>22 Do you see that?</p> <p style="text-align: right;">Page 113</p>

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<p>1 A. I do see that.</p> <p>2 MR. COSTAKOS: Objection. Calls for</p> <p>3 speculation.</p> <p>4 BY MR. SHULMAN:</p> <p>5 Q. How is Dr. Kirk's emphasized idea that he</p> <p>6 communicated in this March 1998 email any different than</p> <p>7 the brainstorming idea that you, Stuelpnagel, and Auger</p> <p>8 came up with in the summer of 1998 as described in the</p> <p>9 testimony we looked at earlier?</p> <p>10 MR. COSTAKOS: Objection. Form, foundation.</p> <p>11 THE WITNESS: Well, that's interesting.</p> <p>12 This -- I couldn't draw any conclusions either way</p> <p>13 because he just says fixtured. He doesn't describe how.</p> <p>14 But at first glance, I would say that, you</p> <p>15 know, it -- this could well be an example of something I</p> <p>16 did mention earlier, which is you see something and more</p> <p>17 than one person has the idea. It could be the -- the</p> <p>18 same idea.</p> <p>19 It's actually hard for me to imagine here how</p> <p>20 it's -- he doesn't provide enough description for me to</p> <p>21 say it's the same idea or different, and I'll explain</p> <p>22 that, but at the level of conceptually -- conceptually</p> <p style="text-align: right;">Page 114</p>	<p>1 things that run past the device to be processed, or like</p> <p>2 a ticker tape, running through to be process.</p> <p>3 So, for all I know, what he means by fixturing</p> <p>4 is a completely different concept of, you know -- of</p> <p>5 bundles that are -- that are -- that traverse something</p> <p>6 and samples are brought to it as opposed to a fixturing</p> <p>7 where it's dipped into a plate.</p> <p>8 So -- sorry for being so long-winded. I just</p> <p>9 want to be clear on this.</p> <p>10 So I think at a high level, it looks to me the</p> <p>11 same, but he doesn't provide enough detail here for me to</p> <p>12 say that it's the same.</p> <p>13 Q. Okay. And the things you pointed to were no</p> <p>14 explicit reference to dipping, and you're not sure what</p> <p>15 he means by fixturing?</p> <p>16 A. By fixture, exactly.</p> <p>17 Q. Okay. Let's deal with the dipping first.</p> <p>18 A. Okay.</p> <p>19 Q. If you look at paragraph No. 2 on page 1.</p> <p>20 A. Okay.</p> <p>21 Q. Just above the paragraph we just looked at --</p> <p>22 A. Yes.</p> <p style="text-align: right;">Page 116</p>
<p>1 doing parallel tests using microtiter plates, I think</p> <p>2 it's the same idea.</p> <p>3 It doesn't mention anything about, you know,</p> <p>4 dipping or anything like that. Again, after the fact,</p> <p>5 it's -- you know, one might say perhaps it's sort of</p> <p>6 obvious so it's implied, but, you know, one could also</p> <p>7 say that perhaps, you know, there's a plate with wells</p> <p>8 with samples in it. There's a device with these arrays</p> <p>9 and sample is transferred to the arrays.</p> <p>10 So I don't see -- I'm guessing that's not what</p> <p>11 he meant, but I don't see any explicit description that</p> <p>12 says it's precisely the same idea.</p> <p>13 BY MR. SHULMAN:</p> <p>14 Q. Okay.</p> <p>15 A. And, again, fixturing. You know, fixturing</p> <p>16 could be -- and I'm sure this is pretty easy to resolve</p> <p>17 by, perhaps, talking to him, if he can recollect that far</p> <p>18 back.</p> <p>19 Fixturing could be -- you know, there are</p> <p>20 technologies where -- oh, let me give you an example.</p> <p>21 Not a very pleasant example, but, you know, bullets going</p> <p>22 through a gun. You can have, you know, a whole string of</p> <p style="text-align: right;">Page 115</p>	<p>1 Q. -- he says, "Test reagents can be loaded into</p> <p>2 fibers as beads or as a chemical coding step. Tests can</p> <p>3 be performed by a simple dipping step."</p> <p>4 A. Yeah. So if you -- so if you take two in</p> <p>5 combination with three, then it'd be reasonable to infer</p> <p>6 that that's what he meant.</p> <p>7 And, you know, that's probably what I would</p> <p>8 infer, but that -- but I think that's not the same as</p> <p>9 being sure that that is what he meant.</p> <p>10 Q. Now let's look at paragraph No. 4 --</p> <p>11 A. Okay.</p> <p>12 Q. -- which follows paragraphs 2 and 3. And in</p> <p>13 the last sentence -- or last two sentences, he says,</p> <p>14 "Multiple dipping and reading allow decoding to be</p> <p>15 separated from testing and allows for background noise</p> <p>16 corrections."</p> <p>17 A. Uh-huh.</p> <p>18 Q. And then in the final sentence he says, "Test</p> <p>19 samples can be prepared in separate wells until test</p> <p>20 fibers are ready to be dipped."</p> <p>21 A. That seems to answer it.</p> <p>22 MR. COSTAKOS: Objection.</p> <p style="text-align: right;">Page 117</p>

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<p>1 BY MR. SHULMAN:</p> <p>2 Q. All right.</p> <p>3 A. So -- so in that context, it seems to me that</p> <p>4 he is describing some sort of fixture where 1536 bundles</p> <p>5 are dipped into wells. At least that's -- that's my</p> <p>6 reading of it.</p> <p>7 Q. Okay. And if you look at the second page of</p> <p>8 the document -- well, excuse me.</p> <p>9 Yeah. About halfway down the page, there's a</p> <p>10 Roman numeral II entitled "screening applications."</p> <p>11 A. Yes.</p> <p>12 Q. And then there's a subparagraph (a). Do you</p> <p>13 see that?</p> <p>14 A. Yes.</p> <p>15 Q. And he states, "I was excited to see how small</p> <p>16 and convenient each 6,000-member fiber bundle is." Do</p> <p>17 you see that?</p> <p>18 A. Yes.</p> <p>19 Q. And then two sentences down on that same</p> <p>20 paragraph, he says, quote, "We have been working hard on</p> <p>21 these technologies at PCOP."</p> <p>22 A. Yes.</p> <p style="text-align: right;">Page 118</p>	<p>1 A. Well, sorry. Say it again.</p> <p>2 1536 fiber bundles will contain up to 6,000</p> <p>3 strands.</p> <p>4 Yeah, I -- I don't think, actually, I was</p> <p>5 correct in answering yes.</p> <p>6 I think it -- I think I should answer that</p> <p>7 it's -- it's reasonable to infer that that's what he</p> <p>8 might have meant.</p> <p>9 MR. SHULMAN: Let me see if I can clarify it.</p> <p>10 BY MR. SHULMAN:</p> <p>11 Q. From the second page under "screening</p> <p>12 applications," paragraph A, he says, quote, "I was</p> <p>13 excited to see how small and convenient each 6,000 member</p> <p>14 fiber bundle is."</p> <p>15 A. Yes.</p> <p>16 Q. So each fiber bundle had 6,000 members. Right?</p> <p>17 A. Yes.</p> <p>18 MR. COSTAKOS: Same objections. Calls for</p> <p>19 speculation.</p> <p>20 BY MR. SHULMAN:</p> <p>21 Q. And as described on page 1, paragraph 2, second</p> <p>22 sentence --</p> <p style="text-align: right;">Page 120</p>
<p>1 Q. Do you see that?</p> <p>2 Then he goes on to say, "Coupling to the fiber</p> <p>3 bundle method seems like a big winner," and then he</p> <p>4 explains what he means in the next sentence where he</p> <p>5 reported, quote, "For instance, a low-cost fixture can be</p> <p>6 fabricated that would arrange 1536 fiber bundles to line</p> <p>7 up with the wells of one of the new CoStar plates. Do</p> <p>8 you see that?</p> <p>9 A. Yes.</p> <p>10 Q. And he explains on page 3 that the new CoStar</p> <p>11 plates, about four lines down on page 3, was codeveloped</p> <p>12 with Corning CoStar. Do you see that?</p> <p>13 A. Yes.</p> <p>14 Q. Okay. Now, according to Dr. Kirk's emphasized</p> <p>15 idea in paragraph No. 3 on the first page, each one of</p> <p>16 the 1536 fiber bundles would contain up to 6,000</p> <p>17 fiberoptic strands. Correct?</p> <p>18 A. Yes.</p> <p>19 MR. COSTAKOS: Objection. Form, foundation.</p> <p>20 calls for speculation.</p> <p>21 BY MR. SHULMAN:</p> <p>22 Q. And as -- and as described on page 1 --</p> <p style="text-align: right;">Page 119</p>	<p>1 MR. COSTAKOS: Which one are we looking at now?</p> <p>2 MR. SHULMAN: Page 1, paragraph 2.</p> <p>3 MR. COSTAKOS: Paragraph numbered two?</p> <p>4 MR. SHULMAN: Yes.</p> <p>5 MR. COSTAKOS: Okay.</p> <p>6 BY MR. SHULMAN:</p> <p>7 Q. Second sentence, "The fiberoptic strands in</p> <p>8 each bundle could have a bead loaded under their</p> <p>9 projected end or projecting end."</p> <p>10 A. Sorry. I'm slightly lost here. The paragraph</p> <p>11 No. 2, the --</p> <p>12 Q. Second sentence.</p> <p>13 A. -- second sentence, "Tests can be performed by</p> <p>14 a simple dipping."</p> <p>15 Oh. "Tests reagents can be loaded as beads or</p> <p>16 as a chemical coding step?"</p> <p>17 Q. Yes.</p> <p>18 A. Yeah.</p> <p>19 Q. So he said that the fibers could have a bead</p> <p>20 located on one end. Correct?</p> <p>21 MR. COSTAKOS: Same objections. Calls for</p> <p>22 speculation.</p> <p style="text-align: right;">Page 121</p>

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<p>1 THE WITNESS: Test reagents can be loaded into</p> <p>2 fibers as beads or as a chemical coating step.</p> <p>3 Yes, I'm not sure what he means by test</p> <p>4 reagents, but yes.</p> <p>5 BY MR. SHULMAN:</p> <p>6 Q. Okay. And each bead could have a different</p> <p>7 bioactive test agent. Correct?</p> <p>8 MR. COSTAKOS: Same objections.</p> <p>9 THE WITNESS: Each bead could have a different</p> <p>10 bioactive test agent. Yes.</p> <p>11 BY MR. SHULMAN:</p> <p>12 Q. Okay. And as described in Dr. Kirk's March 9</p> <p>13 email, all 1536 bundles --</p> <p>14 A. Yes.</p> <p>15 Q. -- could be combined into a single fixture as</p> <p>16 we saw on page 2. Right?</p> <p>17 MR. COSTAKOS: Same objections.</p> <p>18 THE WITNESS: Yes.</p> <p>19 BY MR. SHULMAN:</p> <p>20 Q. Okay. And that is an array matrix, as you guys</p> <p>21 used the term later at Illumina. Correct?</p> <p>22 MR. COSTAKOS: Objection. Form.</p> <p style="text-align: right;">Page 122</p>	<p>1 Q. Okay.</p> <p>2 A. I mean, for example, at level of detail, you</p> <p>3 know -- you know, he says low cost fixture can be</p> <p>4 fabricated, and, you know, it's actually -- he probably</p> <p>5 was not aware of some of the -- that the very stringent</p> <p>6 alignment records and so on. We were not -- we had to</p> <p>7 figure some of those things out as well.</p> <p>8 Q. Okay.</p> <p>9 A. So there were -- there may have been some</p> <p>10 different details.</p> <p>11 Q. Now, let's look at the last page of the email,</p> <p>12 if you would, please, the second-to-last paragraph.</p> <p>13 And there Dr. Kirk stated that he would welcome</p> <p>14 the opportunity to further discuss his ideas. Do you see</p> <p>15 that?</p> <p>16 A. I do see that.</p> <p>17 Q. Did -- do you know whether Dr. Stuelpnagel took</p> <p>18 Dr. Kirk up on his offer to further discuss the ideas?</p> <p>19 A. I -- I don't recall.</p> <p>20 Q. Did you discuss Dr. Kirk's ideas as set forth</p> <p>21 in the email with Dr. Stuelpnagel now that you've looked</p> <p>22 at it in greater detail?</p> <p style="text-align: right;">Page 124</p>
<p>1 THE WITNESS: I hesitate to sort of</p> <p>2 overinterpret what he wrote, but my read -- reading of it</p> <p>3 is -- is yes.</p> <p>4 BY MR. SHULMAN:</p> <p>5 Q. Okay.</p> <p>6 A. I mean, it seems to me he is describing an</p> <p>7 array matrix format.</p> <p>8 Q. All right. Now, we've seen the sections that</p> <p>9 describe the 1536 array matrix bundles being inserted on</p> <p>10 proposed to be inserted into a 1536 microtiter well</p> <p>11 plate.</p> <p>12 How is that idea, as described in Dr. Kirk's</p> <p>13 email, different than what you and Stuelpnagel and Auger</p> <p>14 originated during this brainstorming session in the</p> <p>15 summer of '98?</p> <p>16 MR. COSTAKOS: Objection. Form, foundation</p> <p>17 THE WITNESS: I'd have to go back and look</p> <p>18 at -- at that collection of documents.</p> <p>19 But my -- my -- my general impression at this</p> <p>20 point is that it is likely different in some details, but</p> <p>21 at the conceptual level, I think it's the same idea.</p> <p>22 BY MR. SHULMAN:</p> <p style="text-align: right;">Page 123</p>	<p>1 A. I -- I recall discussing the decoding idea with</p> <p>2 Dr. Stuelpnagel. I don't recall discussing the other</p> <p>3 ideas.</p> <p>4 Q. Do you recall hearing about the other ideas,</p> <p>5 the dipping 1536 business?</p> <p>6 MR. COSTAKOS: Objection. Form.</p> <p>7 THE WITNESS: I don't. I mean, I really don't.</p> <p>8 So I don't know whether that's because I did hear about</p> <p>9 them, I did read this and I've forgotten, or I didn't</p> <p>10 hear about them.</p> <p>11 I'm -- I'm still a little bit puzzled by the</p> <p>12 dates because I have in my mind a pretty clear idea --</p> <p>13 again, you know, sometimes those recollections can be</p> <p>14 wrong -- that when I heard about his idea to hybridize</p> <p>15 short oligos, it was in the context of me having -- you</p> <p>16 know, of having this sequential decoding idea that --</p> <p>17 that -- that I described to you earlier.</p> <p>18 And so -- and discussing that in that context</p> <p>19 with Dr. Stuelpnagel, how -- how this approach was not as</p> <p>20 good as that approach.</p> <p>21 And so I -- I would love to know when I met</p> <p>22 with them in Palo Alto because I'm about 90 percent sure</p> <p style="text-align: right;">Page 125</p>

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<p>1 I didn't discuss that idea with them till after I visited 2 David Walt's lab, but I may be wrong on that. 3 But if that's the case, then I think I 4 probably -- I think the most likely explanation is that I 5 did not -- I did not see this till -- this idea in 1B 6 till -- till after the May time frame. 7 But I don't know -- but if this email was being 8 exchanged, I don't know why I would not have, basically, 9 so I'm a little bit confused about the time frame. 10 BY MR. SHULMAN: 11 Q. Okay. Do you know whether Dr. Stuelpnagel 12 suggested to Dr. Kirk that Dr. Kirk send a copy of the 13 March 9, 1998, email to Dr. Walt at Tufts? 14 A. No idea. 15 (Exhibit 13 was marked.) 16 MR. SHULMAN: Okay. Let me mark as Exhibit 13 17 an email from Dr. Kirk to Dr. Walt dated March 11, 1998. 18 Oops, sorry. You guys have to put less wax on 19 your tables. 20 BY MR. SHULMAN: 21 Q. It's a short email, and you'll see attached to 22 it is the March 9 email that we just looked at.</p> <p style="text-align: right;">Page 126</p>	<p>1 received this email that it would be in the collection of 2 stuff that I provided in the earlier thing. 3 Q. It may be. I don't know what that collection 4 is or whether it's -- 5 A. Okay. 6 Q. -- been given to us or not. I'm not suggesting 7 it wasn't, but I just don't know. 8 A. Okay. 9 Q. Do you know why Dr. Stuelpnagel suggested to 10 Kirk that Kirk send his March 9 email to Dr. Walt? 11 MR. COSTAKOS: Objection. Form. 12 THE WITNESS: No. 13 BY MR. SHULMAN: 14 Q. You mentioned earlier that Dr. Walt was -- or 15 you thought that Dr. Walt was asked to consider Kirk's 16 qualifications as a potential employee of Illumina. 17 A. I think it's -- 18 MR. COSTAKOS: Objection. Form. 19 THE WITNESS: -- fair to say that I was 20 probably speculating that if -- in the context of that -- 21 of some particular email we were talking about earlier 22 that that would be a -- the most likely reason.</p> <p style="text-align: right;">Page 128</p>
<p>1 A. Yeah. 2 Q. You see here that Dr. Kirk, on March 11 of '98, 3 wrote to Dr. Walt stating that he was so excited after 4 the visit to Dr. Walt's lab and his discussion with 5 Dr. Walt that he sent to Stuelpnagel and Larry Bock a 6 stream of consciousness email with some ideas and 7 business strategy thoughts. Do you see that? 8 A. Yes. 9 Q. And he goes on to say that "Stuelpnagel and 10 Bock suggested that I send them on to you." Do you see 11 that? 12 A. Yes. 13 Q. Okay. Does this refresh your recollection at 14 all about having been informed of the email as well? 15 A. No, it doesn't. 16 MR. COSTAKOS: Objection. Form. 17 /// 18 BY MR. SHULMAN: 19 Q. Okay. 20 A. You know, I'm pretty darn sure, there may -- 21 simply way to settle it. 22 I'm pretty darn sure that if -- if I had</p> <p style="text-align: right;">Page 127</p>	<p>1 BY MR. SHULMAN: 2 Q. Okay. 3 A. I certainly don't recall specifically if that 4 was the reason. 5 Q. So we've seen that the email, the March 9 6 email, was sent to Stuelpnagel and that Stuelpnagel, in 7 the March 11 email, according to Kirk, requested that he 8 send it to Walt. 9 Now let me mark as Exhibit 14 yet another 10 email, this one from Stuelpnagel to Kirk, dated March 19, 11 1998, which also concerns the March 9 email. And, 12 mercifully, it's short. 13 (Exhibit 14 was marked.) 14 BY MR. SHULMAN: 15 Q. And in this March 9, 1998, email from 16 Stuelpnagel to Kirk, Dr. Stuelpnagel says that Dr. Walt 17 was impressed with the March 9 email. You see that? 18 A. Yes. 19 Q. And that both he, Stuelpnagel, and Walt 20 appreciated Kirk's enthusiasm. Do you see that? 21 A. Yes. 22 Q. Does this refresh your recollection at all</p> <p style="text-align: right;">Page 129</p>

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<p>1 about having either seen or discussed the March 9 email 2 in this time frame? 3 MR. COSTAKOS: Objection. Form. 4 THE WITNESS: Unfortunately not. 5 BY MR. SHULMAN: 6 Q. Okay. Do you know who Wally is? 7 A. I'm pretty sure I do. I think it was -- I 8 think Wally -- I think it was Wally -- I want to say his 9 name was Parse, I think, P-a-r-s-e -- I could be wrong on 10 that -- an employee of Caliper. 11 Q. Okay. Was Wally somebody who Stuelpnagel was 12 considering hiring for Illumina? 13 A. I -- I don't recall, but I -- I do know that he 14 held him in -- I assume that's the same person -- in very 15 high regard, and so then not unlikely that he was 16 interested in a person like Wally for the position. 17 The way I read, "I still need to clone Wally" 18 almost implies to me that he might not have been 19 considering him. Might not be available. 20 Q. I read it as he needed two of them. 21 A. Right. Because the first one wasn't available. 22 Q. Oh, I see, I see, I see. Okay.</p> <p style="text-align: right;">Page 130</p>	<p>1 Q. We've already looked at the bottom half of this 2 email. It was another exhibit. But the response to the 3 bottom half is up at the top. 4 And do you see in the email from Dr. Kirk to 5 Dr. Stuelpnagel, he, Dr. Kirk, is reminding 6 Dr. Stuelpnagel that he had previously mentioned that 7 Rhett Affleck had worked with him on some of the ideas in 8 that March 9 email? 9 MR. COSTAKOS: Objection. Form. 10 THE WITNESS: I see that he writes, "I 11 mentioned before that Rhett Affleck" -- yes. 12 BY MR. SHULMAN: 13 Q. Does that refresh any recollection about 14 information you may have received in the first half of 15 1998 about the March 9, '98, Kirk email? 16 A. No, it doesn't. 17 MR. COSTAKOS: Objection. Form. 18 BY MR. SHULMAN: 19 Q. So having looked at all of this correspondence 20 about the March 9 email that we've looked at today, both 21 preceding and proceeding the email itself, is your memory 22 at all refreshed about whether you saw or heard about any</p> <p style="text-align: right;">Page 132</p>
<p>1 In 1998 did you ever learn that a man by the 2 name of Rhett Affleck had worked with Kirk in coming up 3 with some of the ideas in Kirk's long March 9 email? 4 MR. COSTAKOS: Objection. Form. 5 THE WITNESS: Sorry. I remember the name Rhett 6 Affleck, so I sort of wasn't paying proper attention. 7 MR. SHULMAN: Sure. Let me repeat it. 8 BY MR. SHULMAN: 9 Q. In 1998 did you ever learn that Rhett 10 Affleck -- that's A-f-f-l-e-c-k -- had worked with Kirk 11 in coming up with some of Kirk's ideas that are set forth 12 in that long March 9 email? 13 MR. COSTAKOS: Same objections. 14 THE WITNESS: No. I -- 15 BY MR. SHULMAN: 16 Q. You don't recall that? 17 A. No, don't recall. 18 MR. SHULMAN: Let me mark as Exhibit 15 another 19 relatively short email dated May 5, 1998, from Dr. Kirk 20 to Dr. Stuelpnagel. 21 (Exhibit 15 was marked.) 22 BY MR. SHULMAN:</p> <p style="text-align: right;">Page 131</p>	<p>1 of the ideas in the March 9 email in the first half of 2 1998 other than section 1B? 3 MR. COSTAKOS: Objection. Form. Also I think 4 you mischaracterized his testimony. 5 THE WITNESS: So -- so it's not refreshed. 6 I -- I don't recall hearing these, and I don't -- I don't 7 recall the -- even the time frame of -- of -- of 1B. 8 BY MR. SHULMAN: 9 Q. And I take it that Dr. Stuelpnagel, to your 10 memory, never showed you or discussed the non-section 1B 11 ideas in the March 9 email prior to this brainstorming 12 session in summer of '98? 13 MR. COSTAKOS: Objection. Form. 14 THE WITNESS: I don't think I could -- so -- I 15 don't think so, is the answer, but I don't think I can 16 say that definitively because this -- the time frame of 17 this correspondence, but -- so -- so the best of my 18 recollection, no, he did not. 19 BY MR. SHULMAN: 20 Q. Okay. 21 A. But, you know, it's possible they did. I'm 22 just not remembering.</p> <p style="text-align: right;">Page 133</p>

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<p>1 Q. But to the best of your recollection, he did 2 not?</p> <p>3 A. Best of my recollection, he did not.</p> <p>4 Q. Are you surprised that he never did so?</p> <p>5 MR. COSTAKOS: Objection. Form.</p> <p>6 BY MR. SHULMAN:</p> <p>7 Q. In the first half of 1998?</p> <p>8 MR. COSTAKOS: Foundation.</p> <p>9 THE WITNESS: So I -- he showed me something, 10 and 1B is what I remember. I -- so I can't say for sure 11 that he never showed me this email. He might have shown 12 me this email, but I don't think so, in -- in the -- 13 before -- certainly before the date you mentioned 14 because -- as to -- so it's hard to answer the second 15 part of the question as -- as -- which I think was "why?" 16 Are you asking me why?</p> <p>17 MR. SHULMAN: Let me ask it again. I think you 18 may have forgotten what the question was, if you don't 19 mind my interrupting.</p> <p>20 THE WITNESS: No, that's fine.</p> <p>21 MR. SHULMAN: Okay.</p> <p>22 THE WITNESS: I think you asked me, did he show</p> <p style="text-align: right;">Page 134</p>	<p>1 section 1B, that, in fact, I did see the email and I just 2 don't remember it or that I saw section 1B in the context 3 of a -- of a separate document.</p> <p>4 Q. Okay. So it is correct that, as best you can 5 recall, you did not see the March 9 email in the first 6 half of '98 other than perhaps section 1B?</p> <p>7 MR. COSTAKOS: Objection. Form.</p> <p>8 THE WITNESS: Yes, that's correct.</p> <p>9 BY MR. SHULMAN:</p> <p>10 Q. Okay. Are you surprised that Dr. Stuelpnagel 11 didn't tell you about the concept of 1536 bundles being 12 dipped into a microtiter plate in the first half of 1998?</p> <p>13 MR. COSTAKOS: Objection. Form.</p> <p>14 THE WITNESS: I -- I -- I'm having a hard time 15 because of the dates. You -- you've made a definitive 16 statement that he didn't tell me this.</p> <p>17 I have no idea -- I have no way of being sure 18 that he didn't tell me this. I don't think he told me 19 this.</p> <p>20 BY MR. SHULMAN:</p> <p>21 Q. Okay.</p> <p>22 A. But you're asking me to speculate. You're</p> <p style="text-align: right;">Page 136</p>
<p>1 it to me in the first half of year. A, I don't -- so 2 it's difficult to answer because, A, I don't even know if 3 he showed it to me. I don't think so. B, you know, when 4 did I learn of this information? And I think the second 5 part of your question was, why did he not show it to me</p> <p>6 MR. SHULMAN: Close, but not quite. Let me 7 re-ask the question.</p> <p>8 BY MR. SHULMAN:</p> <p>9 Q. You've told me that to the best of your 10 recollection, which may be faulty, but to the best of 11 your recollection, Dr. Stuelpnagel never showed you the 12 March 9 email in the first half of 1998 with the possible 13 exception --</p> <p>14 A. Or ever.</p> <p>15 Q. -- or ever with the possible exception of 16 section 1B.</p> <p>17 A. Yes.</p> <p>18 Q. Correct?</p> <p>19 A. Which --</p> <p>20 Q. Is that correct?</p> <p>21 A. Yes, that's correct.</p> <p>22 Which may mean that -- because I recollect</p> <p style="text-align: right;">Page 135</p>	<p>1 asking me if I'm surprised at something I'm not a hundred 2 percent sure of. Do you see why I'm having a difficult 3 time?</p> <p>4 Q. Yeah, I understand. But to the best of your 5 recollection, he never told you about Dr. Kirk's --</p> <p>6 A. Yeah.</p> <p>7 Q. -- concept of dipping the 1536 bundles --</p> <p>8 A. That's right.</p> <p>9 Q. -- into a plate. Right?</p> <p>10 A. Yes.</p> <p>11 Q. Okay. And I'm asking --</p> <p>12 MR. COSTAKOS: Objection. Form.</p> <p>13 BY MR. SHULMAN:</p> <p>14 Q. -- you --</p> <p>15 (Interruption by reporter.)</p> <p>16 MR. COSTAKOS: Hold on. Hold on. We all need 17 to talk separately.</p> <p>18 MR. SHULMAN: Yeah. Wait --</p> <p>19 THE WITNESS: That's easy.</p> <p>20 MR. SHULMAN: -- wait until I finish the 21 question.</p> <p>22 MR. COSTAKOS: Wait till he finishes the</p> <p style="text-align: right;">Page 137</p>

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1 question.
2 BY MR. SHULMAN:
3 Q. So you told me that to the best of your
4 recollection in the first half of '98, Stuelpnagel never
5 told you about Kirk's conception of this 1536 bundles
6 being dipped simultaneously into a 1536-well microtiter
7 plate. Correct?
8 A. Yes.
9 MR. COSTAKOS: Objection. Form,
10 mischaracterizes.
11 BY MR. SHULMAN:
12 Q. All right. I'm saying assuming that your
13 recollection is, in fact, accurate, are you surprised
14 that Dr. Stuelpnagel didn't tell you about that --
15 MR. COSTAKOS: Same objections.
16 BY MR. SHULMAN:
17 Q. -- in the first half of 1998?
18 A. That --
19 MR. COSTAKOS: I'm sorry. Same objections.
20 THE WITNESS: That question I think I can
21 answer. Assuming that...
22 Yes and no. I have -- anyone who's -- who's

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1 been probably in any science lab or in any company for
2 long enough has had this happen to them, which is
3 sometimes -- it's happened to me.
4 People hear about an idea in some context.
5 Time passes. People's memories are not that good. Some
6 worse, some better, but -- and they actually forget that
7 they hear about it, and then it pops up again.
8 You know, they say, "Oh, how about this?" And,
9 in fact, it was -- it was part of a prior discussion.
10 That's happened to everyone. Happens all the time.
11 So assuming I didn't hear about this in the
12 first half of the year, am I surprised? I -- I would
13 think that most likely that's -- that would have been
14 what happened. I'm a little bit surprised, but it's
15 certainly well within the normal bounds of what happens
16 sometimes.
17 BY MR. SHULMAN:
18 Q. Okay. Why are you a little bit surprised?
19 MR. COSTAKOS: Objection. Form.
20 THE WITNESS: Because -- because in general I
21 think perhaps the time frame -- it seems like it was --
22 you know, it was a relatively recent discussion, but, you

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1 know...
2 BY MR. SHULMAN:
3 Q. You mean the difference in time between the
4 March 9 email and the brainstorming idea in the early
5 summer of '98?
6 MR. COSTAKOS: Objection. Form.
7 BY MR. SHULMAN:
8 Q. Is that what you meant?
9 A. Yes.
10 Q. Seems relatively short?
11 A. Seems relatively short.
12 MR. COSTAKOS: Objection. Form.
13 THE WITNESS: But, again, everybody that I
14 know, including myself, has -- has had cases where, you
15 know, they've heard of something, they've forgotten about
16 it, and then, you know, they've -- they've sort of come
17 up with the same thing again. It -- it happens.
18 BY MR. SHULMAN:
19 Q. And in that situation -- you said this has
20 happened to yourself in the past?
21 A. I think it's probably happened to everybody --
22 Q. Okay.

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1 A. -- who's been doing this for long enough.
2 Q. Well, in the situation where -- that you've
3 experienced personally where somebody told you an idea,
4 some time passed, you forgot about it, and then came up
5 with the idea later, to whom do you attribute the idea?
6 MR. COSTAKOS: Objection. Form, foundation
7 THE WITNESS: To -- it -- if it's -- if it's
8 pretty much the same idea, me personally would attribute
9 it to the person who first -- who first stated it earlier
10 in time.
11 BY MR. SHULMAN:
12 Q. Based upon what you've seen here, do you
13 attribute to Dr. Kirk this idea of taking multiple
14 bundles of fiberoptic arrays or a matrix of arrays and
15 inserting them simultaneously into a microtiter well
16 plate?
17 MR. COSTAKOS: Objection. Form, calls for
18 speculation, foundation.
19 THE WITNESS: So if, in fact, the dates are
20 correct, if, in fact, that the other meeting we were
21 referring to was -- was later, again, I don't recall
22 exactly -- I recall a series of meetings. I don't recall

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<p>1 exactly when they started at CW group where we had the</p> <p>2 discussion that you're referring to about the array</p> <p>3 matrix. If, in fact, that was subsequent in time to</p> <p>4 this, then I think my reasonable reading of this --</p> <p>5 again, you know, you could -- you could say it's -- you</p> <p>6 have to make inferences, but I think they're fairly small</p> <p>7 inferences -- is that if that's correct, then I think it</p> <p>8 would be fair to say that -- that Greg Kirk did come up</p> <p>9 with it first.</p> <p>10 MR. SHULMAN: Okay. It's 12:00 o'clock. I'm</p> <p>11 prepared to continue. If you guys want to quit for lunch</p> <p>12 right now, it's really -- it's your show.</p> <p>13 THE WITNESS: Well, no, it's your show.</p> <p>14 MR. SHULMAN: Oh, it's our show, but you get to</p> <p>15 choose. What do you want to do?</p> <p>16 MR. COSTAKOS: Lunch break would be fine with</p> <p>17 me.</p> <p>18 MR. SHULMAN: Okay.</p> <p>19 THE WITNESS: That sounds good. Thanks.</p> <p>20 MR. SHULMAN: All right. I'm about halfway</p> <p>21 done, so -- and I think things will go a little bit more</p> <p>22 quickly in the afternoon, but just to give you an idea.</p> <p style="text-align: right;">Page 142</p>	<p>1 Q. Okay. Do you recall that in late February of</p> <p>2 2001, Mr. Roberts, on behalf of Dr. Kirk, inquired about</p> <p>3 whether either you or Stuelpnagel or Czarnik had used any</p> <p>4 of Dr. Kirk's oligo decoding ideas that are set forth in</p> <p>5 his March 9 email in connection with an Illumina patent</p> <p>6 application that named you and Czarnik and Stuelpnagel as</p> <p>7 inventors?</p> <p>8 MR. COSTAKOS: Objection. Form.</p> <p>9 THE WITNESS: I -- I -- I don't recall</p> <p>10 specifically whether it was, you know, Bryan Roberts or</p> <p>11 someone else, but I do recall addressing a question about</p> <p>12 whether we were using some -- some approach of Greg</p> <p>13 Kirk's for decoding, yes.</p> <p>14 BY MR. SHULMAN:</p> <p>15 Q. Okay.</p> <p>16 A. And I don't -- I don't recall the time frame</p> <p>17 either, though.</p> <p>18 Q. All right. Let me see if I can refresh your</p> <p>19 recollection.</p> <p>20 (Exhibit 16 was marked.)</p> <p>21 BY MR. SHULMAN:</p> <p>22 Q. I guess we're up to Exhibit 16, so we'll mark</p> <p style="text-align: right;">Page 144</p>
<p>1 THE WITNESS: Okay.</p> <p>2 VIDEOGRAPHER: Off the record at 12:04 p m.</p> <p>3 (The lunch recess was taken at 12:04 p m.)</p> <p>4 Proceedings scheduled to resume at 1:00 p m.)</p> <p>5 * * *</p> <p>6 LUNCH RECESS</p> <p>7 * * *</p> <p>8 (The deposition resumed at 12:53 p m.)</p> <p>9 VIDEOGRAPHER: On the record at 12:53 p m.</p> <p>10 BY MR. SHULMAN:</p> <p>11 Q. Dr. Chee, did there come a time after 1998 when</p> <p>12 Dr. Stuelpnagel reviewed with you the March 9, 1998,</p> <p>13 email that Dr. Kirk had sent to Stuelpnagel?</p> <p>14 MR. COSTAKOS: Objection. Foundation.</p> <p>15 THE WITNESS: I don't have any recollection of</p> <p>16 reviewing that email.</p> <p>17 BY MR. SHULMAN:</p> <p>18 Q. Okay. Have you ever heard of a man by the name</p> <p>19 of Bryan Roberts?</p> <p>20 A. I know Bryan Roberts, yes.</p> <p>21 Q. He's a venture guy of some sort?</p> <p>22 A. Yes.</p> <p style="text-align: right;">Page 143</p>	<p>1 as Exhibit 16 a February 24, 2001, email from Dr. Kirk to</p> <p>2 Bryan Roberts to which is attached another copy of the</p> <p>3 March 9, 1998, email that Kirk sent to Stuelpnagel.</p> <p>4 So just for your own edification, the top</p> <p>5 section on page 1 is Kirk's email from February 24, 2001,</p> <p>6 and then beginning at the bottom of that page and</p> <p>7 continuing for two and a half pages is another copy of</p> <p>8 the March 9 email.</p> <p>9 A. Okay.</p> <p>10 Q. If you could just look at the top section since</p> <p>11 we've already looked at the March 9 email.</p> <p>12 A. Okay. I've read that top section.</p> <p>13 Q. Okay. Looking at the third paragraph of the</p> <p>14 top section on page 1 of Exhibit 16, do you see there</p> <p>15 that in that paragraph Dr. Kirk stated that he is</p> <p>16 forwarding a copy of Illumina's June 1998 patent filing</p> <p>17 as well as a copy of his own March 1998 email that he had</p> <p>18 already sent to Stuelpnagel and Bock three years earlier?</p> <p>19 A. Essentially, yes. He says, "I am sending you a</p> <p>20 copy of the Illumina PCT filing with a forward of my</p> <p>21 email."</p> <p>22 MR. SHULMAN: Okay. And let's mark as</p> <p style="text-align: right;">Page 145</p>

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<p>1 Exhibit 17 the patent filing identified as an attachment</p> <p>2 to this email, and it is WO 99/67641.</p> <p>3 (Exhibit 17 was marked.)</p> <p>4 BY MR. SHULMAN:</p> <p>5 Q. And this patent names you, Stuelpnagel, and</p> <p>6 Czarnik as inventors. Do you see that?</p> <p>7 A. Yes.</p> <p>8 Q. Okay. And it's entitled "Decoding of Array</p> <p>9 Sensors with Microspheres." Do you see that?</p> <p>10 A. Yes.</p> <p>11 Q. And it claims priority from a June 1998</p> <p>12 application filed in the United States. Do you see that?</p> <p>13 A. Yes.</p> <p>14 Q. Okay.</p> <p>15 A. I see -- well, I see "priority data," and then</p> <p>16 I see two references there.</p> <p>17 Q. One of which is June of '98?</p> <p>18 A. Yes.</p> <p>19 Q. Okay. And the number of this application,</p> <p>20 namely 67641, filed in 1999, matches the number in the</p> <p>21 attachment to Dr. Kirk's email, Exhibit 16. Correct?</p> <p>22 A. Sorry. What was the number? 67641 matches...</p> <p style="text-align: right;">Page 146</p>	<p>1 MR. SHULMAN: Yes.</p> <p>2 THE WITNESS: Yes, I see that.</p> <p>3 BY MR. SHULMAN:</p> <p>4 Q. Okay. And with respect to his oligo decoding</p> <p>5 idea contained in his March 1998 email, in the last</p> <p>6 sentence of the third paragraph of this email, Dr. Kirk</p> <p>7 says that he would like to ask if any of the three</p> <p>8 inventors on the attached Illumina patent filing was</p> <p>9 motivated by his oligo decoding idea set forth in his</p> <p>10 March 1998 email. Do you see that?</p> <p>11 MR. COSTAKOS: Objection. Form.</p> <p>12 THE WITNESS: Yes, I think so. He says,</p> <p>13 "Nonetheless, I would like to ask if any of the three</p> <p>14 inventors were motivated by this email."</p> <p>15 BY MR. SHULMAN:</p> <p>16 Q. Okay. Now, Dr. Stuelpnagel has testified that</p> <p>17 in February of 2001, Mr. Roberts forwarded to him</p> <p>18 Dr. Kirk's February 24, 2001, email that Kirk wrote to</p> <p>19 Roberts. And I'm just informing you of that by way of</p> <p>20 background.</p> <p>21 MR. COSTAKOS: I think you mischaracterized the</p> <p>22 testimony, but --</p> <p style="text-align: right;">Page 148</p>
<p>1 Q. Up at the top.</p> <p>2 A. Up at the top? Yes.</p> <p>3 Q. Okay.</p> <p>4 A. 6 -- 99/67641. This is how -- oh, A2, yeah.</p> <p>5 Q. Okay.</p> <p>6 A. It says A -- 641A2, and this says 641, but then</p> <p>7 over here it says A2.</p> <p>8 Q. Right.</p> <p>9 Now, the March 1998 email that we've spent some</p> <p>10 time on today is copied into the body of Dr. Kirk's</p> <p>11 February 24, 2001, email. Do you see that?</p> <p>12 A. So that's this next page.</p> <p>13 Yes.</p> <p>14 Q. Okay. Now, let's look at the third sentence of</p> <p>15 this February 24 email that is the first page of</p> <p>16 Exhibit 16. And there Dr. Kirk stated that, quote, "It</p> <p>17 really seems like I did outline the approach of binding</p> <p>18 and stripping, decoding oligos, in order to calibrate the</p> <p>19 location of each cDNA-containing bead prior to use in an</p> <p>20 assay." Do you see that?</p> <p>21 MR. COSTAKOS: You're talking about the third</p> <p>22 paragraph? The third sentence of the third paragraph?</p> <p style="text-align: right;">Page 147</p>	<p>1 BY MR. SHULMAN:</p> <p>2 Q. Not at all, but, anyway, will you accept my</p> <p>3 representation for purposes of the question?</p> <p>4 A. So for purposes of the question, certainly, I</p> <p>5 think it's obviously not my business to figure out --</p> <p>6 Q. Right.</p> <p>7 A. -- whether the context is correct.</p> <p>8 Q. Okay. Have you ever seen Dr. Stuelpnagel's</p> <p>9 February 26, 2001, response to Mr. Roberts' inquiry about</p> <p>10 inventorship that he made on behalf of Dr. Kirk?</p> <p>11 MR. COSTAKOS: Objection. Form, foundation.</p> <p>12 THE WITNESS: I'm sorry. I have no way of</p> <p>13 remembering what emails I've seen or haven't seen that</p> <p>14 far back.</p> <p>15 MR. SHULMAN: Fair enough, fair enough. So let</p> <p>16 me show it to you.</p> <p>17 Let's mark as Exhibit 18 a two-page document</p> <p>18 containing a February 26, 2001, email from Bryan Roberts</p> <p>19 to John Stuelp- -- I'm sorry -- from Bryan Roberts to</p> <p>20 Greg Kirk, which also contains a February 26, 2001, email</p> <p>21 from Stuelpnagel to Bryan Roberts with CCs to Nicky</p> <p>22 Espinosa and Mark Chee.</p> <p style="text-align: right;">Page 149</p>

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<p>1 (Exhibit 18 was marked.)</p> <p>2 BY MR. SHULMAN:</p> <p>3 Q. Again, just to give you context, the first</p> <p>4 email in the chain that we see here on this exhibit</p> <p>5 begins almost halfway down. It's the one from</p> <p>6 Stuelpnagel to Bryan Roberts.</p> <p>7 A. Roberts.</p> <p>8 Q. And then the email at the top is the next email</p> <p>9 in the chain.</p> <p>10 A. I've read it.</p> <p>11 Q. Okay. So this exhibit contains an email from</p> <p>12 Mr. Roberts to Dr. Kirk up at the top dated February 26,</p> <p>13 2001. Do you see that?</p> <p>14 A. Yes.</p> <p>15 MR. COSTAKOS: Objection. Form.</p> <p>16 BY MR. SHULMAN:</p> <p>17 Q. And by this February 26 email, Mr. Roberts is</p> <p>18 forwarding to Dr. Kirk an email that Dr. Stuelpnagel sent</p> <p>19 to Roberts earlier that same day. Is that correct?</p> <p>20 MR. COSTAKOS: Objection. Form, foundation</p> <p>21 THE WITNESS: Well, I assume so. I mean,</p> <p>22 assuming this is all one printout. Yes.</p> <p style="text-align: right;">Page 150</p>	<p>1 Q. What is your understanding of the reason that</p> <p>2 you were sent a copy of Dr. Stuelpnagel's February 26</p> <p>3 email?</p> <p>4 MR. COSTAKOS: Objection. Form, foundation</p> <p>5 THE WITNESS: I'd just be speculating on what</p> <p>6 Dr. Stuelpnagel intended.</p> <p>7 BY MR. SHULMAN:</p> <p>8 Q. I'm not asking you for what he intended, but</p> <p>9 what's your understanding?</p> <p>10 MR. COSTAKOS: Objection. Form, foundation</p> <p>11 That is exactly --</p> <p>12 THE WITNESS: I think I answered. I'd be --</p> <p>13 you want me to speculate on --</p> <p>14 BY MR. SHULMAN:</p> <p>15 Q. No. I -- well, let me ask it a different way.</p> <p>16 This isn't all that important.</p> <p>17 A. Okay.</p> <p>18 Q. But upon receiving the email, did you have an</p> <p>19 understanding about why you were being sent a copy?</p> <p>20 MR. COSTAKOS: Objection. Form.</p> <p>21 THE WITNESS: Well, so -- so I can't even</p> <p>22 remember receiving this email, so I -- I don't know</p> <p style="text-align: right;">Page 152</p>
<p>1 BY MR. SHULMAN:</p> <p>2 Q. Okay. And Dr. Stuelpnagel's email to</p> <p>3 Mr. Roberts from earlier that same day begins in the</p> <p>4 middle of page 1 there. Do you see that?</p> <p>5 MR. COSTAKOS: Same objections.</p> <p>6 THE WITNESS: Yes.</p> <p>7 BY MR. SHULMAN:</p> <p>8 Q. Okay. And you and Nicky Espinosa are shown as</p> <p>9 carbon copy recipients of Dr. Stuelpnagel's February 26</p> <p>10 email. Correct?</p> <p>11 A. Yes.</p> <p>12 Q. Did you get a copy of Dr. Stuelpnagel's</p> <p>13 February 26, 2001, email?</p> <p>14 MR. COSTAKOS: Objection. Foundation.</p> <p>15 THE WITNESS: I can only assume because I'm on</p> <p>16 this mailing list that I did, but I don't specifically</p> <p>17 remember this email.</p> <p>18 BY MR. SHULMAN:</p> <p>19 Q. Okay. Do you have any reason to doubt that you</p> <p>20 received a copy and read it on or about the date that it</p> <p>21 bears?</p> <p>22 A. No reason to doubt.</p> <p style="text-align: right;">Page 151</p>	<p>1 what -- assuming I did receive it, which I'm sure I</p> <p>2 did -- I have no reason to doubt I did -- I don't have</p> <p>3 any way of recollecting that the context, what I knew at</p> <p>4 the time -- and so there may have been some clear reason</p> <p>5 for this, but at this point in time, all I can say is,</p> <p>6 you know, I don't know. I'd have to speculate on why.</p> <p>7 It could have been that he was just copying me for</p> <p>8 informational purposes. It could have been some other</p> <p>9 reason. I don't know.</p> <p>10 BY MR. SHULMAN:</p> <p>11 Q. Okay. Fair enough.</p> <p>12 Now, Dr. Stuelpnagel's February 26 email, which</p> <p>13 is at the bottom of -- the bottom half of page 1 of</p> <p>14 Exhibit 18, responds to the inquiry that Roberts had made</p> <p>15 on behalf of Kirk about whether any of the three</p> <p>16 inventors on the Illumina patent had been motivated by</p> <p>17 Kirk's oligo decoding ideas. Do you see that?</p> <p>18 MR. COSTAKOS: Objection. Form. What are you</p> <p>19 pointing at?</p> <p>20 MR. SHULMAN: I'm just asking a question.</p> <p>21 MR. COSTAKOS: Well, you said, "Do you see</p> <p>22 that," so what are you --</p> <p style="text-align: right;">Page 153</p>

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<p>1 BY MR. SHULMAN:</p> <p>2 Q. Do you understand that?</p> <p>3 MR. COSTAKOS: Objection. Form, foundation</p> <p>4 THE WITNESS: Yeah, actually, I was also</p> <p>5 wondering what you were -- I think I read something there</p> <p>6 somewhere.</p> <p>7 Make sure I'm looking at the right page.</p> <p>8 Sorry. Can you ask the question again?</p> <p>9 MR. SHULMAN: Sure.</p> <p>10 BY MR. SHULMAN:</p> <p>11 Q. Do you understand that Dr. Stuelpnagel's</p> <p>12 February 26, 2000, email was a response to Mr. Roberts</p> <p>13 about Kirk's inquiry about inventorship concerning this</p> <p>14 oligo decoding idea set forth in his March 1998 email?</p> <p>15 MR. COSTAKOS: Objection. Form, foundation</p> <p>16 THE WITNESS: So I guess you're asking me to --</p> <p>17 to sort of relate this chain of correspondence.</p> <p>18 And from what I see here, it's -- John</p> <p>19 Stuelpnagel is replying to Bryan Roberts on Monday,</p> <p>20 26 February 2001. He's saying, "Thanks for sending me</p> <p>21 the email that Greg has saved." Presumably it's this one</p> <p>22 that was attached.</p> <p style="text-align: right;">Page 154</p>	<p>1 MR. COSTAKOS: Same objections.</p> <p>2 THE WITNESS: Yes.</p> <p>3 BY MR. SHULMAN:</p> <p>4 Q. And next, Dr. Stuelpnagel stated that "I have</p> <p>5 reviewed the email and discussed it with Mark Chee." Do</p> <p>6 you see that?</p> <p>7 MR. COSTAKOS: Same objections.</p> <p>8 THE WITNESS: "Had an opportunity" -- yes.</p> <p>9 BY MR. SHULMAN:</p> <p>10 Q. Did Dr. Stuelpnagel either show you or discuss</p> <p>11 the March 9 email from Kirk on or about February 26 of</p> <p>12 2001?</p> <p>13 A. I don't recall. This implies -- his statement</p> <p>14 here implies that he did, but I don't recall.</p> <p>15 Q. You don't recall the event?</p> <p>16 A. No, I don't.</p> <p>17 Q. Okay. And I take it you don't recall having</p> <p>18 read the March 9 email in or about February of 2001?</p> <p>19 A. I don't.</p> <p>20 Q. Okay. Dr. Stuelpnagel reports that you had</p> <p>21 reminded him that you had already had a conversation with</p> <p>22 Dr. Kirk regarding this topic of inventorship. Do you</p> <p style="text-align: right;">Page 156</p>
<p>1 ///</p> <p>2 BY MR. SHULMAN:</p> <p>3 Q. The March 9th one?</p> <p>4 A. March 9 email that's attached here. And if so,</p> <p>5 then -- let's see.</p> <p>6 Yes. So these two seem -- sorry. What was the</p> <p>7 question again? These two seem to be related.</p> <p>8 Q. Do you understand from reading Exhibit 18 --</p> <p>9 A. Yeah.</p> <p>10 Q. -- that Dr. Stuelpnagel was responding to the</p> <p>11 inquiry that had been made of him about whether any of</p> <p>12 the three of you were motivated from the March 9 email to</p> <p>13 use Kirk's oligo decoding ideas?</p> <p>14 MR. COSTAKOS: Objection. Form, calls for</p> <p>15 speculation.</p> <p>16 THE WITNESS: That's how it seems to me.</p> <p>17 BY MR. SHULMAN:</p> <p>18 Q. Okay. Now let's look at what</p> <p>19 Dr. Stuelpnagel -- Stuelpnagel said about that in his</p> <p>20 email of February 26.</p> <p>21 First, he thanked Roberts for sending him</p> <p>22 Kirk's email that Kirk had saved. Do you see that?</p> <p style="text-align: right;">Page 155</p>	<p>1 see that?</p> <p>2 A. Yes, I see that.</p> <p>3 MR. COSTAKOS: Same objections.</p> <p>4 BY MR. SHULMAN:</p> <p>5 Q. Do you know what that refers to?</p> <p>6 A. I'm -- I don't, but I'm -- I am wondering if it</p> <p>7 was to do with the meeting I mentioned earlier that I had</p> <p>8 with Greg that I think might have been at Millennium.</p> <p>9 And, you know, I think I had a one-on-one meeting with</p> <p>10 him. And -- and so I suspect we may well have done sort</p> <p>11 of a compare and contrast of the two approaches at that</p> <p>12 time.</p> <p>13 Q. Okay.</p> <p>14 A. But I don't recollect that specifically.</p> <p>15 That's the only thing I think of that could -- that comes</p> <p>16 to mind that could be related to this.</p> <p>17 Q. Okay. Now, that you've looked at this for a</p> <p>18 few minutes, as best you can recall, you did not -- you</p> <p>19 don't remember reviewing the March 9, 1998, email in</p> <p>20 connection with the correspondence here on Exhibit 18?</p> <p>21 A. I think, as I answered earlier, I do remember</p> <p>22 reviewing this -- this concept that is in this -- what he</p> <p style="text-align: right;">Page 157</p>

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<p>1 has is 1B of the March 9 email.</p> <p>2 I don't recall whether it was in the context of</p> <p>3 the whole email or whether it was in a separate document,</p> <p>4 either an excerpt or a completely separate document.</p> <p>5 Q. Okay. You do recall that it was in the form of</p> <p>6 a document, though.</p> <p>7 A. I'm pretty --</p> <p>8 MR. COSTAKOS: Objection. Form.</p> <p>9 THE WITNESS: -- sure it was in the form of a</p> <p>10 document. I'm pretty sure I reviewed something written.</p> <p>11 MR. SHULMAN: Okay.</p> <p>12 THE WITNESS: In fact, I'm virtually certain</p> <p>13 because -- yeah, that's my -- that's my recollection.</p> <p>14 BY MR. SHULMAN:</p> <p>15 Q. Who was Nicky Espinosa as of February 26, 2001?</p> <p>16 A. Nicky Espinosa was our in-house legal counsel,</p> <p>17 and I assume at that point she was in-house because I see</p> <p>18 her email as nespinosa@illumina.com.</p> <p>19 Q. Okay. Do you have an understanding as to why</p> <p>20 she would be copied on Stuelpnagel's February 26, 2001,</p> <p>21 email?</p> <p>22 MR. COSTAKOS: Objection. Form.</p> <p style="text-align: right;">Page 158</p>	<p>1 that you remember reviewing the ideas that are in</p> <p>2 section 1B.</p> <p>3 A. Yes.</p> <p>4 Q. Do you remember why you were reviewing the</p> <p>5 ideas in section 1B?</p> <p>6 A. Let's see. I -- I -- I believe certainly one</p> <p>7 aspect -- it's possible I reviewed them more than once.</p> <p>8 It's -- because one thing that's in my mind is that there</p> <p>9 was a question about whether they would be useful to us,</p> <p>10 whether this is something we should, in fact, try as a --</p> <p>11 as a method of decoding.</p> <p>12 And my conclusion was -- was no, this is not an</p> <p>13 assessment of whether or not this approach could possibly</p> <p>14 work, but -- but it was probably going to be not as</p> <p>15 reliable, much more complex to do, might not even work,</p> <p>16 certainly at the scales that we were contemplating.</p> <p>17 So then I -- I assume from reading this that I</p> <p>18 also reviewed them at some point in terms of whether --</p> <p>19 of this inventorship question, but more prominent in my</p> <p>20 mind was, Is this something that we could use?</p> <p>21 Q. Okay. And if -- correct me if I'm wrong. I</p> <p>22 don't mean to mischaracterize, but I'm trying to remember</p> <p style="text-align: right;">Page 160</p>
<p>1 THE WITNESS: Well, I would infer because, you</p> <p>2 know, she's our -- she was our IP -- legal IP counsel</p> <p>3 that Dr. Stuelpnagel wanted to, at minimum, keep her in</p> <p>4 the loop on -- on this discussion.</p> <p>5 BY MR. SHULMAN:</p> <p>6 Q. Okay. Do you recall that the issue of oligo</p> <p>7 decoding inventorship, however we describe it</p> <p>8 generally -- strike that.</p> <p>9 Do you recall reviewing the issue of oligo</p> <p>10 decoding inventorship with Stuelpnagel in this time frame</p> <p>11 of February of 2001?</p> <p>12 A. I don't, but it seems I must have.</p> <p>13 Q. Okay. It doesn't ring a bell at all?</p> <p>14 A. No. I -- I -- as I said, I remember reviewing</p> <p>15 this -- this concept that's outlined in 1B. I really</p> <p>16 couldn't put a time frame on it.</p> <p>17 So it seems now almost certain that it was in</p> <p>18 the context in this time frame, but -- but I have no</p> <p>19 recollection. So without the information here, you know,</p> <p>20 I would be guessing as to whether it was even plus or</p> <p>21 minus a couple of years, quite frankly.</p> <p>22 Q. Sure. So you've mentioned a few times today</p> <p style="text-align: right;">Page 159</p>	<p>1 what you said this morning about the differences between</p> <p>2 your approach and Kirk's approach.</p> <p>3 If I recall correctly, you said he wanted to</p> <p>4 use short chain oligos and you wanted to use longer chain</p> <p>5 oligos?</p> <p>6 A. Yes.</p> <p>7 MR. COSTAKOS: Objection. Form, incomplete.</p> <p>8 THE WITNESS: And -- and I think perhaps the --</p> <p>9 the more -- the more fundamental difference was that I</p> <p>10 wanted to use -- my design used oligos that should</p> <p>11 hybridize specifically to a particular target sequence.</p> <p>12 So it would be a one-to-one hybridization. They should</p> <p>13 not hybridize to a significant degree to other sequences</p> <p>14 on other beads.</p> <p>15 And Kirk's concept with these shorter oligos is</p> <p>16 that each of these small oligos would hybridize to</p> <p>17 varying degrees to many of the different sequences on</p> <p>18 different beads.</p> <p>19 So his was more of a one-to-many, and mine was</p> <p>20 a one-to-one, achieved by having longer, more specific</p> <p>21 oligos.</p> <p>22 The consequence of the one-to-many is that then</p> <p style="text-align: right;">Page 161</p>

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<p>1 you now have this more complex analog signal that's</p> <p>2 derived from actually multiple of these short oligos, so</p> <p>3 it's actually many-to-many. And real questions around</p> <p>4 how you deconvolve that data and assign identity to</p> <p>5 sequences.</p> <p>6 BY MR. SHULMAN:</p> <p>7 Q. Okay.</p> <p>8 A. So, in essence, that's why I said earlier this</p> <p>9 morning it was a -- sort of an analog approach.</p> <p>10 My approach was a digital approach where you</p> <p>11 get on or off, signal or no signal. You can translate it</p> <p>12 in a binary string of ones and zeroes to assign a</p> <p>13 specific code.</p> <p>14 His was more, is it -- you know, is this</p> <p>15 intensity 1.2 times that intensity, a more tricky</p> <p>16 deconvolving process.</p> <p>17 And that was, to me, as best I can recollect,</p> <p>18 the essential difference.</p> <p>19 Q. Okay. And how long were the short oligo chains</p> <p>20 that Dr. Kirk proposed to use?</p> <p>21 A. Well, again, you know, I certainly don't</p> <p>22 remember what he said at the time, but I can point to</p> <p style="text-align: right;">Page 162</p>	<p>1 was the length of the --</p> <p>2 MR. COSTAKOS: Right. I think he was getting</p> <p>3 there.</p> <p>4 THE WITNESS: Right. I'm getting there. I'm</p> <p>5 getting there.</p> <p>6 MR. SHULMAN: I know. Just -- the record is a</p> <p>7 little -- that's why I'm repeating the question --</p> <p>8 THE WITNESS: Oh, okay.</p> <p>9 MR. SHULMAN: -- because the record -- I</p> <p>10 realize you're sort of thinking out loud sometimes, and</p> <p>11 so I'm just trying to think of what the record is</p> <p>12 going to look like --</p> <p>13 THE WITNESS: Sure.</p> <p>14 MR. SHULMAN: -- so let me repeat the question.</p> <p>15 THE WITNESS: Sure.</p> <p>16 BY MR. SHULMAN:</p> <p>17 Q. For these short oligo chains that Dr. Kirk</p> <p>18 contemplated using, how short was short?</p> <p>19 A. He says here, "I propose to employ a set</p> <p>20 labeled short probes" -- I think he means a set of</p> <p>21 labeled short probes -- "5 mer to 7 mer."</p> <p>22 Q. So 5 to 7?</p> <p style="text-align: right;">Page 164</p>
<p>1 this email --</p> <p>2 Q. Sure.</p> <p>3 A. -- where he states that they were -- let's see.</p> <p>4 What did I read earlier?</p> <p>5 Q. What page are you on?</p> <p>6 A. I think -- which one have I even got here?</p> <p>7 Exhibit 16.</p> <p>8 Q. You're looking at Exhibit 16.</p> <p>9 A. And I'm looking at page 2.</p> <p>10 Q. Okay.</p> <p>11 A. And then I'm looking at the last paragraph on</p> <p>12 page 2.</p> <p>13 Q. Okay.</p> <p>14 A. And he says, "Say you have synthesized</p> <p>15 thousands of distinct gene fragments in that 100 to 1,000</p> <p>16 base pair range on beads with no added tags."</p> <p>17 Another distinction was that my decoding</p> <p>18 approach, which maybe is a more subtle distinction,</p> <p>19 didn't -- didn't necessarily directly decode the -- these</p> <p>20 gene fragments if you were using them. It could be a</p> <p>21 separate tag, but anyway --</p> <p>22 Q. What was the length -- the question was, what</p> <p style="text-align: right;">Page 163</p>	<p>1 A. Yes.</p> <p>2 Q. Okay. And what was the length of the oligo</p> <p>3 probes that you contemplated using in your idea?</p> <p>4 A. Fundamentally long enough to give a specific</p> <p>5 hybridization. In practice, a very reliable range to do</p> <p>6 that in was -- I think we chose round about 20, but it</p> <p>7 can be done with significantly shorter probes if you --</p> <p>8 if you make more effort to optimize the selection of</p> <p>9 sequences and conditions, but sort of to make it more</p> <p>10 robust and bulletproof, I think about 20.</p> <p>11 Q. Okay. Now, going back to the Stuelpnagel</p> <p>12 February 26 email on Exhibit 18 -- it's to your -- right</p> <p>13 there.</p> <p>14 A. Exhibit 18.</p> <p>15 Q. In that email, Dr. Stuelpnagel refers to ideas</p> <p>16 set forth in Dr. Kirk's March 1998 email as "Greg's</p> <p>17 invention." Do you see that?</p> <p>18 MR. COSTAKOS: Objection. Form, calls for</p> <p>19 speculation.</p> <p>20 THE WITNESS: Yes. So I see -- let's see. In</p> <p>21 his email, I think, third paragraph down, itemized one</p> <p>22 is, he says, "Greg's invention is to use sequencing by</p> <p style="text-align: right;">Page 165</p>

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<p>1 hybridization to decode DNA." Yes, I see that. That's</p> <p>2 what you're referring to?</p> <p>3 BY MR. SHULMAN:</p> <p>4 Q. Yes.</p> <p>5 A. Yes.</p> <p>6 Q. And then he uses the phrase "Greg's invention"</p> <p>7 again in the first sentence of the paragraph numbered</p> <p>8 two. Do you see that?</p> <p>9 MR. COSTAKOS: Same objections.</p> <p>10 THE WITNESS: He says, "We do not use Greg's</p> <p>11 invention." Yes.</p> <p>12 BY MR. SHULMAN:</p> <p>13 Q. Now, in the paragraph numbered three of</p> <p>14 Stuelpnagel's February 26 email, he states that the</p> <p>15 method of decoding that Illumina uses was invented by you</p> <p>16 before you joined Illumina. Do you see that?</p> <p>17 MR. COSTAKOS: Objection. Form.</p> <p>18 THE WITNESS: Yes.</p> <p>19 BY MR. SHULMAN:</p> <p>20 Q. And is that your recollection as well?</p> <p>21 A. Yes, it is.</p> <p>22 Q. Okay. And Dr. Stuelpnagel states that "Upon</p> <p style="text-align: right;">Page 166</p>	<p>1 THE WITNESS: That -- you know, I think that's</p> <p>2 the practical consequence.</p> <p>3 My way of thinking wasn't from the IP lawyer's</p> <p>4 way of thinking. It was more, How do we get started</p> <p>5 doing experiments and making this technology work? So I</p> <p>6 certainly wasn't thinking, Okay, I -- if I assign this,</p> <p>7 Illumina owns this.</p> <p>8 It was more, basically, If -- if -- if we put</p> <p>9 these two pieces of technology together, then, you know,</p> <p>10 we have a new platform on which I can invent new cures,</p> <p>11 new things to -- to eventually address and cure diseases.</p> <p>12 BY MR. SHULMAN:</p> <p>13 Q. I understand. Certainly if you use the</p> <p>14 technology that you had come up with along with the Walt</p> <p>15 technology, then you could do these new things that you</p> <p>16 alluded to --</p> <p>17 A. Right.</p> <p>18 Q. -- but my question was a little bit different.</p> <p>19 A. Uh-huh.</p> <p>20 Q. I was asking, what was the reason that you</p> <p>21 assigned to Illumina the rights to the invention?</p> <p>22 A. Because Illumina --</p> <p style="text-align: right;">Page 168</p>
<p>1 joining Illumina, Mark Chee assigned that invention to</p> <p>2 Illumina." Do you see that?</p> <p>3 A. It says, "Mark assigned that invention to</p> <p>4 Illumina." Yes.</p> <p>5 Q. Okay. And why did you assign your decoding</p> <p>6 invention to Illumina?</p> <p>7 A. Well, it -- it was just a fit with the</p> <p>8 technology. It was a random array; so you needed some</p> <p>9 method to figure out where things were. And I was -- I</p> <p>10 was most strongly motivated at the time to develop a</p> <p>11 technology to solve what I thought were important</p> <p>12 problems in -- in basic research and in medicine.</p> <p>13 And so, you know, I was very keen to tackle</p> <p>14 this problem. And by assigning the invention to Illumina</p> <p>15 along with me joining Illumina, I saw a path at the time</p> <p>16 to -- to solving this problem, to -- to having a new</p> <p>17 technology that could, you know, be used in identifying</p> <p>18 and hopefully one day curing diseases.</p> <p>19 Q. Okay. And was the purpose of assigning your</p> <p>20 decoding invention to Illumina to make sure that Illumina</p> <p>21 owned the rights to that invention?</p> <p>22 MR. COSTAKOS: Objection. Form.</p> <p style="text-align: right;">Page 167</p>	<p>1 MR. COSTAKOS: Objection. Asked and answered.</p> <p>2 THE WITNESS: The reason was because Illumina</p> <p>3 had the technology for the arrays of beads, and this was</p> <p>4 a complementary technology, and together they were</p> <p>5 enabling for this new platform.</p> <p>6 BY MR. SHULMAN:</p> <p>7 Q. But you could have retained ownership and still</p> <p>8 allowed Illumina to use your idea. Correct?</p> <p>9 A. You know, I -- I wasn't thinking in that way,</p> <p>10 and I had relatively little business experience at the</p> <p>11 time. I had worked previously as a scientist.</p> <p>12 You know, many people, I'm sure -- I can see</p> <p>13 now in hindsight, many people in my position at the time</p> <p>14 would have done just what you said and would have thought</p> <p>15 in that way, but that's not how I was thinking. That's</p> <p>16 not what I did.</p> <p>17 Q. Okay. Were you paid for the assignment rights?</p> <p>18 A. No, I wasn't directly. They -- I don't recall</p> <p>19 there being any separate transaction. This was part</p> <p>20 of -- part and parcel of what came with -- with</p> <p>21 nGenetics.</p> <p>22 Q. Okay. Did nGenetics own the rights to this</p> <p style="text-align: right;">Page 169</p>

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1 idea, this decoding idea, or did you personally own the
2 rights to it?
3 MR. COSTAKOS: Objection. Form.
4 THE WITNESS: The -- I don't remember exactly
5 how it was documented, but it was clearly nGenetics that
6 owned the rights to it.
7 BY MR. SHULMAN:
8 Q. So it was really nGenetics who assigned the
9 rights to Illumina?
10 MR. COSTAKOS: Objection. Foundation.
11 THE WITNESS: I -- again, I don't remember the
12 specific documentation, but I think it was -- just in
13 terms of the assignment, I don't remember, but it was
14 acquired by Illumina as part of the assets of nGenetics.
15 BY MR. SHULMAN:
16 Q. Okay. Now, in paragraph 3 of Stuelpnagel's
17 February 26, 2001, email, Dr. Stuelpnagel says that he
18 doesn't remember ever sharing Kirk's March 1998 email
19 with you prior to February 26, 2001. Do you see that?
20 A. Sorry. Where --
21 Q. Exhibit 18.
22 A. Exhibit 18.

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1 Q. Paragraph No. 3. Numbered three.
2 MR. COSTAKOS: Next page.
3 MR. SHULMAN: Let me repeat the question.
4 BY MR. SHULMAN:
5 Q. In that paragraph that has the number three
6 before it, Dr. Stuelpnagel says that he doesn't remember
7 ever sharing Kirk's March 1998 email with you before
8 February 26 of 2001. Do you see that?
9 A. Yes, I see that.
10 MR. COSTAKOS: Objection. Form.
11 BY MR. SHULMAN:
12 Q. And that's consistent with your recollection.
13 Correct?
14 A. More or less. It's not entirely consistent. I
15 don't remember -- I don't remember seeing the email at
16 all. This implies that I did see the email at some
17 stage. And as I testified earlier, I remember some of
18 the content of the email, which, now that I see this,
19 probably means that I -- I did see the whole thing, I
20 didn't remember the rest, and I saw it after this date,
21 but -- but my recollection is -- is -- even now is that I
22 don't remember most of the contents of that email.

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1 MR. SHULMAN: Can you read back his answer. I
2 sort of zoned out.
3 THE REPORTER: "A. More or less. It's not
4 entirely consistent. I don't remember -- I don't
5 remember seeing the email at all. This implies that I
6 did see the email at some stage. And as I testified
7 earlier, I remember some of the content of the email,
8 which, now that I see this, probably means that I -- I
9 did see the whole thing, I didn't remember the rest, and
10 I saw it after this date, but -- but my recollection
11 is -- is -- even now is that I don't remember most of the
12 contents of that email."
13 MR. SHULMAN: Yeah, I'm a little confused. You
14 may be, too, listening to that answer, but --
15 THE WITNESS: Yeah, I realize that --
16 MR. COSTAKOS: Hold on. Just wait for his
17 question.
18 MR. SHULMAN: Let me just ask it one more
19 time --
20 MR. COSTAKOS: Yeah, that's fine.
21 MR. SHULMAN: -- so you can clarify it for me.
22 I'll ask the same set of questions again, and

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1 maybe it will be a little bit more clear.
2 MR. COSTAKOS: Why don't you just ask the last
3 one.
4 MR. SHULMAN: I'm going to.
5 Well, just a minute. I'll ask it the way I
6 want.
7 MR. COSTAKOS: For crying out loud.
8 BY MR. SHULMAN:
9 Q. Again, looking at that paragraph No. 3 on
10 page 2 of Exhibit 18 -- there you go -- there Stuelpnagel
11 says that he doesn't remember ever sharing Kirk's
12 March 1998 email with you prior to February 26, 2001.
13 MR. COSTAKOS: Objection. Form.
14 BY MR. SHULMAN:
15 Q. My question is, it's also your recollection
16 that prior to February 26, 2001, Stuelpnagel did not
17 share Kirk's March 1998 email with you. Is that correct?
18 MR. COSTAKOS: Objection. Form.
19 THE WITNESS: I guess where I'm having a little
20 trouble with the question is that as I listen to the
21 question, it implies to me that perhaps I'm remembering
22 after this date seeing this email. And what I'm saying

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<p>1 is that I don't recall him sharing the email with me</p> <p>2 prior to this date, and I don't recall him sharing the</p> <p>3 email with me after this date.</p> <p>4 BY MR. SHULMAN:</p> <p>5 Q. Okay. So --</p> <p>6 A. It seems I did see the email, but I'm just not</p> <p>7 recalling that.</p> <p>8 Q. Okay. Let me see -- I think I understand what</p> <p>9 you're saying. Let me just break it into three pieces,</p> <p>10 the three time frames.</p> <p>11 A. Okay.</p> <p>12 Q. You don't recall seeing the March 9 email</p> <p>13 before February 26, 2001. Correct?</p> <p>14 A. I don't recall seeing the March 9 email at any</p> <p>15 time.</p> <p>16 Q. Okay. But I need to break it down into time</p> <p>17 frames.</p> <p>18 A. Okay.</p> <p>19 Q. I'm going to cover every possibility here --</p> <p>20 A. Okay.</p> <p>21 Q. -- I promise.</p> <p>22 Is it correct that you don't recall seeing the</p> <p style="text-align: right;">Page 174</p>	<p>1 MR. SHULMAN: In the second paragraph.</p> <p>2 THE WITNESS: Second paragraph -- second --</p> <p>3 MR. COSTAKOS: Second -- on the first page.</p> <p>4 MR. SHULMAN: Not the numbered one, but the</p> <p>5 actual second paragraph.</p> <p>6 THE WITNESS: Yes.</p> <p>7 BY MR. SHULMAN:</p> <p>8 Q. Okay. And you don't have a -- I take it you</p> <p>9 don't have a recollection of having gone over with</p> <p>10 Stuelpnagel the March 9, 1998, email on February 26 --</p> <p>11 MR. COSTAKOS: Objection.</p> <p>12 BY MR. SHULMAN:</p> <p>13 Q. -- 2001. Correct?</p> <p>14 MR. COSTAKOS: Objection. Form.</p> <p>15 THE WITNESS: That is correct. And as I read</p> <p>16 it now, you know, I don't think John Stuelpnagel -- it's</p> <p>17 hard to know what's actually -- what's actually meant</p> <p>18 here, right, but I don't think he's directly saying</p> <p>19 that -- necessarily that he showed me the email. He</p> <p>20 said --</p> <p>21 BY MR. SHULMAN:</p> <p>22 Q. I'm not suggesting that he did.</p> <p style="text-align: right;">Page 176</p>
<p>1 email prior to February 26, 2001?</p> <p>2 A. It's correct that I don't remember seeing this</p> <p>3 March 9 email prior to that date.</p> <p>4 Q. Okay. And is it also correct that you don't</p> <p>5 recall seeing the March 9, 1998, email after February 26,</p> <p>6 2001?</p> <p>7 A. That's also correct. Although, from this email</p> <p>8 correspondence, it seems that I did see it then.</p> <p>9 Q. Okay. I'm going to cover the actual</p> <p>10 February 26 date in a moment. We've done before. Were</p> <p>11 going to do after. And then we'll come back to</p> <p>12 February 26.</p> <p>13 A. Okay.</p> <p>14 Q. So is it correct that you don't recall seeing</p> <p>15 the March 9, 1998, email after February 26, 2001?</p> <p>16 A. It's correct that I don't recall seeing that</p> <p>17 email after February 26.</p> <p>18 Q. Okay. Now let's focus on February 26 itself.</p> <p>19 Stuelpnagel's email at least suggests that he</p> <p>20 went over it with you on that date. Correct?</p> <p>21 MR. COSTAKOS: Objection. Form, calls for</p> <p>22 speculation.</p> <p style="text-align: right;">Page 175</p>	<p>1 MR. COSTAKOS: Hold on. Let him finish.</p> <p>2 THE WITNESS: He said, "I have reviewed the</p> <p>3 email," which clearly implies that he has read it.</p> <p>4 BY MR. SHULMAN:</p> <p>5 Q. Right.</p> <p>6 A. "And have had an opportunity to discuss it with</p> <p>7 Mark."</p> <p>8 Q. Correct.</p> <p>9 A. So -- so it's completely unclear to me whether</p> <p>10 he showed me the email and we discussed it, or he showed</p> <p>11 me something else and we discussed it, or we just</p> <p>12 discussed it.</p> <p>13 Q. I understand that.</p> <p>14 So is it fair to say that you don't recall</p> <p>15 having seen the email on February 26, 2001?</p> <p>16 A. That is correct.</p> <p>17 Q. Okay. Do you have any reason to doubt that</p> <p>18 you, quote, "discussed" the email with Stuelpnagel on</p> <p>19 February 26, 2001?</p> <p>20 MR. COSTAKOS: Objection. Form, foundation.</p> <p>21 THE WITNESS: I have no reason to doubt that.</p> <p>22 BY MR. SHULMAN:</p> <p style="text-align: right;">Page 177</p>

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<p>1 Q. Okay. Do you recall what the discussion</p> <p>2 concerned?</p> <p>3 MR. COSTAKOS: Objection. Form --</p> <p>4 THE WITNESS: Wait a minute.</p> <p>5 MR. COSTAKOS: -- foundation.</p> <p>6 THE WITNESS: On the -- sorry to do this.</p> <p>7 Going back to the dates, on that particular</p> <p>8 date, so the reason for saying this is on that date was</p> <p>9 because of the --</p> <p>10 BY MR. SHULMAN:</p> <p>11 Q. Because he says he never shared it with you</p> <p>12 prior to that date.</p> <p>13 MR. COSTAKOS: Hold on. What's your question?</p> <p>14 What's the question?</p> <p>15 BY MR. SHULMAN:</p> <p>16 Q. My question was -- let me rephrase it.</p> <p>17 A. Prior to that date. Okay. Got it.</p> <p>18 Q. I think --</p> <p>19 A. Okay.</p> <p>20 Q. -- we're on the same wavelength.</p> <p>21 He says elsewhere in this email that he never</p> <p>22 shared the March '98 email with you before February 26.</p> <p style="text-align: right;">Page 178</p>	<p>1 described in the March 19 email. I don't recall when</p> <p>2 that took place.</p> <p>3 It seems likely that it took place on</p> <p>4 February 26, but I don't recall that it took place on</p> <p>5 that date.</p> <p>6 MR. SHULMAN: Fair enough.</p> <p>7 BY MR. SHULMAN:</p> <p>8 Q. Now, if you could look at the paragraph</p> <p>9 numbered four, the one that has four in front of it on</p> <p>10 Exhibit 18, it's on the second page. Do you have that?</p> <p>11 A. Yes.</p> <p>12 Q. And there Dr. Stuelpnagel says that although</p> <p>13 his name appears on the Illumina patent about which</p> <p>14 Dr. Kirk had inquired, his contribution to the patent has</p> <p>15 nothing to do with the oligo decoding method that</p> <p>16 Illumina uses. Do you see that?</p> <p>17 A. Yes.</p> <p>18 MR. COSTAKOS: Objection. Form.</p> <p>19 BY MR. SHULMAN:</p> <p>20 Q. To your knowledge, is that statement true?</p> <p>21 MR. COSTAKOS: I don't -- I really don't see</p> <p>22 that statement. Where -- where is "nothing to do with"?</p> <p style="text-align: right;">Page 180</p>
<p>1 Right?</p> <p>2 A. Yes.</p> <p>3 Q. Okay. And elsewhere in the email he says, "I</p> <p>4 discussed the email with Mark." Right?</p> <p>5 A. Yes.</p> <p>6 Q. Okay. So that discussion must have taken</p> <p>7 place --</p> <p>8 A. Must have taken place.</p> <p>9 Q. -- on February 26. Right?</p> <p>10 MR. COSTAKOS: Objection. Calls for</p> <p>11 speculation.</p> <p>12 BY MR. SHULMAN:</p> <p>13 Q. Okay. And my question is, do you recall what</p> <p>14 you and he discussed about the email on the occasion that</p> <p>15 you discussed it, namely February 26?</p> <p>16 MR. COSTAKOS: Same objections.</p> <p>17 THE WITNESS: So -- so, again, assuming all</p> <p>18 this information in this email is correct and that a</p> <p>19 discussion did take place on February 26, I don't recall</p> <p>20 what we discussed then.</p> <p>21 All I can say is I do recall, as I mentioned</p> <p>22 before, a discussion about this decoding idea that's</p> <p style="text-align: right;">Page 179</p>	<p>1 MR. SHULMAN: It was my paraphrase, but I'll</p> <p>2 happy to rephrase.</p> <p>3 BY MR. SHULMAN:</p> <p>4 Q. He says that while his name appears on the</p> <p>5 patent, "my intellectual contribution to the patent is</p> <p>6 not the decoding method that we use for our oligo</p> <p>7 arrays." Do you see that?</p> <p>8 A. Yes.</p> <p>9 Q. Is that statement true, to your knowledge?</p> <p>10 A. To my knowledge, that's true.</p> <p>11 Q. Okay. And then in the next sentence he</p> <p>12 describes what his contribution was. Do you see that?</p> <p>13 A. Yes.</p> <p>14 Q. And what he says is that his contribution</p> <p>15 "involved the ability to perform the decoding</p> <p>16 post-analytically, decoding only the hits from a</p> <p>17 screening exercise and strategies around that approach."</p> <p>18 Do you see that?</p> <p>19 A. Yes, I see that.</p> <p>20 Q. And then he says, "Because I did not make any</p> <p>21 intellectual contribution to the oligo method, I hope it</p> <p>22 is obvious that I did not use any of the information sent</p> <p style="text-align: right;">Page 181</p>

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<p>1 to me by Greg to assist in the development of Mark's 2 invention." Do you see that?</p> <p>3 A. Yes.</p> <p>4 Q. To the best of your knowledge, is it true that 5 Stuelpnagel did not make any intellectual contribution to 6 the oligo method?</p> <p>7 MR. COSTAKOS: Objection. Form.</p> <p>8 THE WITNESS: To the best of my knowledge, 9 that's true.</p> <p>10 BY MR. SHULMAN:</p> <p>11 Q. Okay. Now, I want to focus on the time period 12 after June of 1998. Okay?</p> <p>13 A. Now, I should just clarify one thing. I 14 understand that -- that -- I -- what I -- what I answered 15 is true, but just in terms of nuances, I don't recall at 16 all the claims in that invention. So, you know, it's 17 possible someone could point to a claim that has the 18 oligo method and something else where he contributed, but 19 in terms of the method per se, it's true.</p> <p>20 MR. SHULMAN: Okay, fair enough. Thank you for 21 the clarification.</p> <p>22 BY MR. SHULMAN:</p> <p style="text-align: right;">Page 182</p>	<p>1 Q. I just want to know whether you ever told the 2 examiner during that time frame, July '98 through January 3 of '09, that in the summer of '98 you and Stuelpnagel and 4 Auger arrived at the idea of simultaneously inserting an 5 array of fiberoptic arrays into individual wells of a 6 microtiter well plate.</p> <p>7 MR. COSTAKOS: Objection. Form. And I think 8 he asked for clarification of the question.</p> <p>9 THE WITNESS: I just wanted a clarification 10 what you mean by "tell the examiner."</p> <p>11 BY MR. SHULMAN:</p> <p>12 Q. Either in written form or you spoke to him on 13 the telephone or you met with him, however you might make 14 a communication.</p> <p>15 A. Okay. So my only communication with the patent 16 office was in the form of patent documents. So I don't 17 recall what's in them, what's not in them. Whatever's in 18 that is essentially what I've communicated.</p> <p>19 Q. You mean the application that was filed?</p> <p>20 MR. COSTAKOS: Objection. Form.</p> <p>21 THE WITNESS: Yes, I would say.</p> <p>22 BY MR. SHULMAN:</p> <p style="text-align: right;">Page 184</p>
<p>1 Q. Now, I want to focus on the -- you can put down 2 the email. We're done with it.</p> <p>3 I want to focus on the time period after June 4 of 1998. Okay?</p> <p>5 During the time period beginning July of 1998 6 all the way through January of 2009, during that 11-year 7 time span -- okay?</p> <p>8 A. Okay.</p> <p>9 Q. -- did you ever tell the examiner who was 10 handling the applications for the 841 and 020 patents 11 that are involved in this lawsuit that in the summer of 12 1998 you and your co-inventors, Stuelpnagel and Auger, 13 arrived at the idea of simultaneously inserting an array 14 of fiberoptic arrays into individual wells of a well 15 plate?</p> <p>16 MR. COSTAKOS: Objection. Form.</p> <p>17 THE WITNESS: So I never told the examiner 18 anything.</p> <p>19 BY MR. SHULMAN:</p> <p>20 Q. Okay. So the answer to my question is no?</p> <p>21 A. I think so. Do you mean did I interact with a 22 patent examiner?</p> <p style="text-align: right;">Page 183</p>	<p>1 Q. Okay. Let me just -- just by way of 2 background, you understand from having gone through the 3 patent application process that the whole thing begins by 4 submitting the application to the patent office.</p> <p>5 Correct?</p> <p>6 A. Yes.</p> <p>7 Q. Okay. And thereafter you receive 8 communications from the examiner, and you respond to 9 them, and that back-and-forth goes on for some period of 10 time?</p> <p>11 A. Yes.</p> <p>12 Q. Okay. And then eventually you either get your 13 patent or you don't. Right?</p> <p>14 A. Yes.</p> <p>15 Q. Okay. In connection with the two patents that 16 are involved in this lawsuit that name you as an 17 inventor, I take it that you read the application before 18 it was submitted?</p> <p>19 A. I'm pretty sure -- I certainly -- I certainly 20 read drafts. I couldn't even be sure at this stage if 21 I -- if I fully read the final version as submitted, but 22 essentially the answer is yes.</p> <p style="text-align: right;">Page 185</p>

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<p>1 Q. Okay. And after the submission of the</p> <p>2 application itself, what role, if any, did you have in</p> <p>3 the back-and-forth between the examiner and whoever was</p> <p>4 handling your application on your behalf?</p> <p>5 A. I had -- I had no direct interaction. You</p> <p>6 know, occasionally somebody would send me some piece of</p> <p>7 information or something to be signed, but I was not</p> <p>8 actively involved in, I guess, prosecuting these patents.</p> <p>9 Q. Okay. When you say you weren't actively</p> <p>10 involved, you had no direct involvement with the</p> <p>11 examiner, I take it?</p> <p>12 A. Exactly.</p> <p>13 Q. Okay. Did you have any direct involvement with</p> <p>14 the lawyer or patent agent who was handling the</p> <p>15 application on your behalf?</p> <p>16 MR. COSTAKOS: You can answer that yes or no.</p> <p>17 MR. SHULMAN: That's all I'm looking for.</p> <p>18 MR. COSTAKOS: Sure.</p> <p>19 THE WITNESS: I -- I don't recall.</p> <p>20 BY MR. SHULMAN:</p> <p>21 Q. You don't recall that having occurred?</p> <p>22 A. I don't recall whether or not I had active</p> <p style="text-align: right;">Page 186</p>	<p>1 question that's pending?</p> <p>2 MR. SHULMAN: There wasn't one. He's reviewing</p> <p>3 the documents.</p> <p>4 MR. COSTAKOS: Okay.</p> <p>5 BY MR. SHULMAN:</p> <p>6 Q. I'll just note for your own edification, since</p> <p>7 these are long documents, that Exhibit 20 is a patent</p> <p>8 that issued off of a continuation of Exhibit 19; so the</p> <p>9 specification is identical, just the claims are</p> <p>10 different.</p> <p>11 A. Okay.</p> <p>12 Q. Let me just ask you a couple of preliminaries.</p> <p>13 You are the Mark Chee that's listed as an</p> <p>14 inventor on both of these?</p> <p>15 A. Yes, I am.</p> <p>16 Q. And do you see that the original original</p> <p>17 application for both goes back to December 28, 1998,</p> <p>18 under "provisional"? Do you see that?</p> <p>19 A. Provisional. Oh, yes.</p> <p>20 Q. Okay. And so let me re-ask --</p> <p>21 A. Okay.</p> <p>22 Q. -- the question I was asking earlier.</p> <p style="text-align: right;">Page 188</p>
<p>1 involvement in that. You know, sometimes I would talk to</p> <p>2 our in-house counsel about something, some -- some</p> <p>3 patents, it seemed to me, I had pretty much no</p> <p>4 involvement in, so these particular ones I don't recall.</p> <p>5 Q. Okay. During this time period of July 1998 all</p> <p>6 the way up through January of '09, did you ever consider</p> <p>7 telling the examiner handling the applications for the</p> <p>8 841 and the 020 patents that back in the summer of 1998</p> <p>9 you had arrived at the idea of simultaneously inserting</p> <p>10 an array of fiberoptic arrays into individual wells of a</p> <p>11 microtiter well plate?</p> <p>12 MR. COSTAKOS: Objection. Form.</p> <p>13 THE WITNESS: I'm a bit confused because I'm</p> <p>14 not even sure -- which patent are you -- which patent</p> <p>15 application are you referring to, or which patent are you</p> <p>16 referring to?</p> <p>17 MR. SHULMAN: The two patents-in-suit. Let me</p> <p>18 show them to you so there's no confusion.</p> <p>19 Let's mark as Exhibit 19 a copy of U.S. Patent</p> <p>20 7510841, and as Exhibit 20, U.S. Patent 7612020.</p> <p>21 (Exhibits 19 and 20 were marked.)</p> <p>22 MR. COSTAKOS: I'm sorry. What was the</p> <p style="text-align: right;">Page 187</p>	<p>1 During the time period of July '98 through</p> <p>2 January of '09, did you ever consider, give thought to</p> <p>3 telling the examiner handling the applications for these</p> <p>4 two patents that in the summer of '98 you and your fellow</p> <p>5 inventors arrived at the idea of simultaneously inserting</p> <p>6 an array of fiberoptic arrays into individual wells of a</p> <p>7 microtiter well plate?</p> <p>8 MR. COSTAKOS: Objection. Form.</p> <p>9 THE WITNESS: I'm still confused, and the</p> <p>10 reason is -- let me tell you why I'm confused -- is that</p> <p>11 it seems to me that this patent, this figure right on the</p> <p>12 front here shows this inserting of -- of these fiberoptic</p> <p>13 arrays or rays into -- into wells. So I'm not even sure</p> <p>14 what -- why I would -- so the answer is no, but I'm not</p> <p>15 even sure what -- why I would -- that would even occur to</p> <p>16 me.</p> <p>17 BY MR. SHULMAN:</p> <p>18 Q. Okay. I'm not --</p> <p>19 A. Am I missing something?</p> <p>20 Q. -- asking you to speculate as to why I'm asking</p> <p>21 the questions.</p> <p>22 A. Okay.</p> <p style="text-align: right;">Page 189</p>

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<p>1 Q. I just want an answer to the question.</p> <p>2 I take it the answer to my question that I put</p> <p>3 to you is no?</p> <p>4 MR. COSTAKOS: Objection. Form.</p> <p>5 THE WITNESS: Yes.</p> <p>6 ///</p> <p>7 BY MR. SHULMAN:</p> <p>8 Q. Okay.</p> <p>9 A. I just wanted to make sure I wasn't</p> <p>10 misunderstanding something.</p> <p>11 Q. You're not. You're not.</p> <p>12 A. Okay.</p> <p>13 Q. During this same time period of July '98</p> <p>14 through January of '09, did you ever discuss with either</p> <p>15 of your co-inventors whether you should tell the examiner</p> <p>16 handling the applications for these two patents that in</p> <p>17 the summer of 1998 you arrived at this idea of</p> <p>18 simultaneously inserting an array of fiberoptic arrays</p> <p>19 into individual wells of a microtiter well plate?</p> <p>20 MR. COSTAKOS: Objection. Form, asked and</p> <p>21 answered, I think.</p> <p>22 THE WITNESS: I guess -- I guess -- I guess,</p> <p style="text-align: right;">Page 190</p>	<p>1 simultaneously inserting an array of fiberoptic arrays</p> <p>2 into individual wells of a microtiter well plate?</p> <p>3 MR. COSTAKOS: Same objections. Form and asked</p> <p>4 and answered.</p> <p>5 THE WITNESS: No. But I'm not a hundred</p> <p>6 percent sure that it was, in fact, in the summer of '98</p> <p>7 that we arrived at that.</p> <p>8 BY MR. SHULMAN:</p> <p>9 Q. Okay. During the time period of July '98</p> <p>10 through January of '09, did you ever discuss with any of</p> <p>11 the attorneys responsible for the 841 and 020 application</p> <p>12 prosecution process whether you should tell the examiner</p> <p>13 that in the summer of 1998 you arrived at the idea of</p> <p>14 simultaneously inserting an array of fiberoptic arrays</p> <p>15 into individual wells of a microtiter well plate?</p> <p>16 MR. COSTAKOS: Objection. Form, also</p> <p>17 foundation.</p> <p>18 THE WITNESS: Didn't you just ask me that</p> <p>19 question? Was it different?</p> <p>20 BY MR. SHULMAN:</p> <p>21 Q. No. It's different. Now I'm asking about</p> <p>22 whether you discussed it with the attorneys.</p> <p style="text-align: right;">Page 192</p>
<p>1 also, I should clarify one thing because I was focusing</p> <p>2 on the -- the "telling the examiner" bit.</p> <p>3 I think, as I mentioned earlier, I'm still a</p> <p>4 little bit unclear about some of these -- these dates</p> <p>5 about, you know, when we had these discussions and</p> <p>6 when -- when we talked about that.</p> <p>7 I -- I certainly -- as I mentioned earlier, I</p> <p>8 do recall this discussion where we -- we talked about</p> <p>9 this array matrix format. I don't recall the specifics</p> <p>10 of the discussion, but I'm not sure exactly when that</p> <p>11 was, whether it was in the summer or whether it could</p> <p>12 even have been earlier.</p> <p>13 BY MR. SHULMAN:</p> <p>14 Q. Well, I'm just going off of what the record</p> <p>15 reflects thus far.</p> <p>16 A. Uh-huh.</p> <p>17 Q. So I'm just asking you this.</p> <p>18 During the time period of July '98 through</p> <p>19 January of '09, did you ever discuss with either of your</p> <p>20 two co-inventors whether you should tell the examiner</p> <p>21 handling the applications for the 841 and the 020 patents</p> <p>22 that in the summer of '98 you arrived at the idea of</p> <p style="text-align: right;">Page 191</p>	<p>1 A. Oh, with the attorneys.</p> <p>2 MR. COSTAKOS: Same objections.</p> <p>3 THE WITNESS: Essentially the same answer, no,</p> <p>4 and the same qualification that I applied to the previous</p> <p>5 question.</p> <p>6 BY MR. SHULMAN:</p> <p>7 Q. Okay. Regardless of the date of this</p> <p>8 brainstorming session, did you ever discuss with the</p> <p>9 attorneys when you came up with this brainstorm?</p> <p>10 A. Um --</p> <p>11 MR. COSTAKOS: Wait, wait. Hold on. I don't</p> <p>12 think you need to answer that question.</p> <p>13 MR. SHULMAN: It's the same one that I just</p> <p>14 asked before.</p> <p>15 MR. COSTAKOS: No, it's not. No, no, no.</p> <p>16 That's not the same question at all.</p> <p>17 MR. SHULMAN: I'll repeat it.</p> <p>18 BY MR. SHULMAN:</p> <p>19 Q. During the time period of July '98 through</p> <p>20 January of '09, did you ever discuss with any of the</p> <p>21 attorneys responsible for the prosecution of the 841 and</p> <p>22 020 application when you arrived at the idea of</p> <p style="text-align: right;">Page 193</p>

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<p>1 simultaneously inserting an array of fiberoptic arrays 2 into individual wells of a well plate? 3 MR. COSTAKOS: You can answer "yes," "no," or 4 "I don't recall." 5 THE WITNESS: I don't recall. 6 BY MR. SHULMAN: 7 Q. Okay. During this same period of July '98 8 through January of '09, did you ever tell the examiner, 9 in any form, who was handling the 841 and 020 10 applications, that in March 1998 Dr. Kirk had disclosed 11 to Stuelpnagel his idea of simultaneously inserting an 12 array of fiberoptic arrays into individual wells of a 13 microtiter well plate? 14 MR. COSTAKOS: Objection. Form, foundation 15 THE WITNESS: I don't recall. As I testified 16 earlier, I don't recall that part of that email. 17 BY MR. SHULMAN: 18 Q. And I realize that, you know, most of your 19 testimony is going to be "I don't recall" because you've 20 already told me, but I've got to ask these questions -- 21 A. I understand. 22 Q. -- so I apologize.</p> <p style="text-align: right;">Page 194</p>	<p>1 mischaracterizes, compound. 2 THE WITNESS: Again, I -- I can't be a hundred 3 percent sure, but I think the answer is no. 4 BY MR. SHULMAN: 5 Q. Okay. During the time period of July '98 6 through January of '09, did you ever disclose to or 7 discuss with any of the attorneys or patent agents 8 responsible for prosecuting the applications for the 841 9 and 020 patents that in March of '98 Kirk had disclosed 10 to Stuelpnagel his idea of simultaneously inserting an 11 array of fiberoptic arrays into individual wells of a 12 microtiter well plate? 13 MR. COSTAKOS: Same objections. 14 THE WITNESS: Again, I -- I can't be completely 15 sure, but I think the answer is no. 16 BY MR. SHULMAN: 17 Q. Okay. And during the time period of July of 18 '98 through January of '09, did you ever disclose to the 19 examiner handling the 841 and 020 applications Dr. Kirk's 20 March 9, 1998, email or its content? 21 MR. COSTAKOS: Objection. Form, foundation. 22 THE WITNESS: I have no recollection of ever</p> <p style="text-align: right;">Page 196</p>
<p>1 A. No, that's fine. 2 Q. During the time period of July '98 through 3 January of '09, did you ever consider telling the 4 examiner handling the applications for the 841 and 020 5 patents that in March of '98 Dr. Kirk had disclosed to 6 Dr. Stuelpnagel his idea of simultaneously inserting an 7 array of fiberoptic arrays into individual wells of a 8 microtiter well plate? 9 MR. COSTAKOS: Objection. Form, foundation. 10 mischaracterizes. 11 THE WITNESS: I -- I think the answer is no, 12 but I -- I don't recall. 13 BY MR. SHULMAN: 14 Q. Again, during the time -- I'm almost done with 15 these questions. 16 During the time period of July '98 through 17 January of '09, did you ever disclose to or discuss with 18 either of your co-inventors that in March of '98 Kirk had 19 disclosed to Stuelpnagel Kirk's idea of simultaneously 20 inserting an array of fiberoptic arrays into individual 21 wells of a microtiter well plate? 22 MR. COSTAKOS: Objection. Form, foundation.</p> <p style="text-align: right;">Page 195</p>	<p>1 having a discussion about that. 2 /// 3 BY MR. SHULMAN: 4 Q. Okay. And during the time period of July of 5 '98 through January of '09, did you ever consider 6 disclosing to the examiner handling the 841 and 020 7 applications Dr. Kirk's March 1998 email or its content? 8 MR. COSTAKOS: Same objections. 9 THE WITNESS: The answer is no because, as I 10 said earlier, I'm not even recollecting that email. 11 MR. SHULMAN: Very well. 12 BY MR. SHULMAN: 13 Q. And during the time period of July of '98 14 through January of '09, did you ever discuss with or 15 disclose to either of your co-inventors Dr. Kirk's March 16 1998 email or its content? 17 MR. COSTAKOS: Objection. Form, same 18 objections, also asked and answered. 19 THE WITNESS: I think same answer, but to the 20 best of my recollection, I -- I don't recall ever having 21 that discussion because I don't recall the email. 22 BY MR. SHULMAN:</p> <p style="text-align: right;">Page 197</p>

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<p>1 Q. By the way, when did Mr. Auger leave Illumina, 2 approximately? 3 A. I don't recall. 4 Q. Was it early on? 5 A. It was early-ish. I -- I couldn't even place 6 it within a year or two. 7 Q. Okay. 8 A. Yeah. 9 Q. Was it before Mr. Flatley joined the 10 organization? 11 A. I don't -- 12 Q. You don't remember? 13 A. Don't remember. 14 Q. Okay. During the time period of July '98 15 through January of '09, did you ever discuss with or 16 disclose to any of the attorneys responsible for the 841 17 and 020 applications Dr. Kirk's March 9, 1998, email or 18 its contents? 19 MR. COSTAKOS: Same objections. Also, asked 20 and answered. 21 THE WITNESS: Maybe I'm confused, but I seem to 21 22 think that I'm answering the same question again.</p> <p style="text-align: right;">Page 198</p>	<p>1 No. 3 of Volume I. We're on the record at 2:08 p m. 2 BY MR. SHULMAN: 3 Q. Dr. Chee, you left Illumina in approximately 4 2004 or 2005. Correct? 5 A. Something like that. 6 Q. Okay. But the mid 2000s? 7 A. Yes. 8 Q. Okay. And after leaving Illumina in the mid 9 2000s, did you ever participate in the prosecution of any 10 of the applications that led to the 841 and 020 patents? 11 MR. COSTAKOS: Objection. Form. 12 THE WITNESS: Occasionally I -- I would get 13 some sort of document to review and sign. That's the 14 extent. 15 BY MR. SHULMAN: 16 Q. Okay. And after leaving Illumina in the mid 17 2000s, did you ever read any of the claims that were 18 being presented to the examiner in connection with the 19 841 and 020 applications? 20 A. I don't recall if I did or didn't. 21 MR. SHULMAN: Okay. Let me mark as Exhibit 21, 22 I guess we're up to, a document from the 841 application</p> <p style="text-align: right;">Page 200</p>
<p>1 Did -- is this different -- 2 MR. SHULMAN: Well, they're all -- they're all 3 different, but I suspect your answers are going to be the 4 same, but I need to ask the questions. 5 THE WITNESS: Okay. How is this different from 6 the previous one? 7 MR. COSTAKOS: That one seemed almost identical 8 to one maybe a few before, but -- 9 MR. SHULMAN: If I -- 10 THE WITNESS: It sounded the same to me. 11 BY MR. SHULMAN: 12 Q. If I repeated myself, I apologize, but could 13 you answer it? 14 A. So the answer is -- is -- is -- I think, again, 15 it's the same answer I've been giving, which is 16 basically, no, I -- no, slash, I have no recollection. 17 MR. SHULMAN: Okay. We need to change the 18 tape, I think. 19 VIDEOGRAPHER: This is the end of disk No. 2 of 20 Volume I. We're off the record at 1:55 p m. 21 (Recess.) 22 VIDEOGRAPHER: This is the beginning of disk</p> <p style="text-align: right;">Page 199</p>	<p>1 entitled "Notice of Allowance and Fees Due." 2 (Exhibit 21 was marked.) 3 BY MR. SHULMAN: 4 Q. And feel free to read it if you want to. I 5 don't have any reason to expect that you've ever seen 6 this before, but let me just represent to you what it is. 7 Okay? 8 A. Sure. 9 Q. It's a document that was issued by the patent 10 office. And as you can see on the first page in the 11 upper right, it was mailed out on December 2, 2008. And 12 it is the document by which the examiner communicated his 13 conclusion that the claims are in a condition to be 14 issued in the patent. Okay? 15 A. Okay. 16 Q. Okay. So that happened on or about December 2 17 of 2008. I just wanted that by way of background. 18 Did you ever read the allowed claims to satisfy 19 yourself that you were the original and first inventor of 20 the subject matter being claimed? 21 A. You know, I remember doing that. I don't 22 remember necessarily doing that for this particular</p> <p style="text-align: right;">Page 201</p>

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<p>1 patent. I just looked at enough of these sorts of</p> <p>2 documents that I -- I couldn't recall and be sure, but I</p> <p>3 assume I did at some point.</p> <p>4 Q. Okay. Could you pull out Exhibit 19, which is</p> <p>5 the 841 patent, and if you turn to the second-to-last</p> <p>6 page, down in the bottom right you'll find the beginning</p> <p>7 of the claims. Do you see that?</p> <p>8 A. Yes.</p> <p>9 Q. Could you read Claim 1 to yourself.</p> <p>10 A. "The method of detecting"...</p> <p>11 Okay.</p> <p>12 Q. Did you ever read this claim before it was</p> <p>13 allowed?</p> <p>14 MR. COSTAKOS: Objection. Asked and answered.</p> <p>15 THE WITNESS: I'm pretty sure I did, but I -- I</p> <p>16 don't have a specific recollection of sitting down and</p> <p>17 reading it.</p> <p>18 BY MR. SHULMAN:</p> <p>19 Q. Okay. If you could pull out Exhibit 12, which</p> <p>20 is Dr. Kirk's March 9, 1998, email.</p> <p>21 As we saw earlier, Dr. Kirk disclosed in his</p> <p>22 March 9 email a microtiter well plate that had a</p> <p style="text-align: right;">Page 202</p>	<p>1 disclosure in paragraph -- I'm sorry -- in his March 9,</p> <p>2 1998, email and the paragraph labeled A in Claim 1 of the</p> <p>3 841 patent?</p> <p>4 MR. COSTAKOS: Objection. Form, foundation,</p> <p>5 calls for a legal conclusion.</p> <p>6 THE WITNESS: So if you want my opinion, I'll</p> <p>7 have to take a look at them again.</p> <p>8 MR. SHULMAN: Sure, sure.</p> <p>9 MR. COSTAKOS: Same objections. Also</p> <p>10 competence.</p> <p>11 BY MR. SHULMAN:</p> <p>12 Q. Just focusing on paragraph A in Claim 1 now.</p> <p>13 A. No, I understand.</p> <p>14 So with the caveat that I'm not sure I'm fully</p> <p>15 competent to make this assessment, you know, given that</p> <p>16 I'm -- you know, I'm -- I'm not -- I don't have any legal</p> <p>17 expertise in this area, it -- it does seem to me that</p> <p>18 just on a -- on a reading of this that they are</p> <p>19 describing that -- that the claim, sort of in a general</p> <p>20 sense, describes what is in this email.</p> <p>21 I am also realizing now, in looking at this</p> <p>22 again, that this email is sort of in two sections.</p> <p style="text-align: right;">Page 204</p>
<p>1 plurality of assay wells where the assay wells were</p> <p>2 designed to contain sample solutions having different</p> <p>3 target analytes. Do you recall that?</p> <p>4 MR. COSTAKOS: Objection. Form, foundation</p> <p>5 THE WITNESS: Let's see. I think so. Let's</p> <p>6 see. Where are we looking at in his email?</p> <p>7 BY MR. SHULMAN:</p> <p>8 Q. I can point you to several. For example, it</p> <p>9 says in paragraph numbered four on page 1, last sentence</p> <p>10 of that paragraph, "Test samples can be prepared in</p> <p>11 separate wells until test fibers are ready to be dipped."</p> <p>12 Right here, No. 4.</p> <p>13 A. Paragraph No. 4, yes.</p> <p>14 Q. Last sentence of that paragraph.</p> <p>15 A. Right.</p> <p>16 Q. And we saw in here that he also disclosed using</p> <p>17 a 1536-well microtiter plate. Correct?</p> <p>18 A. Yes, that's right.</p> <p>19 MR. COSTAKOS: Objection. Form.</p> <p>20 ///</p> <p>21 BY MR. SHULMAN:</p> <p>22 Q. Okay. So is there any difference between his</p> <p style="text-align: right;">Page 203</p>	<p>1 This first section -- I think you were asking</p> <p>2 me earlier if -- if Greg --</p> <p>3 (Interruption by reporter.)</p> <p>4 THE WITNESS: If Greg Kirk was -- these were</p> <p>5 Greg Kirk's ideas, I think it was. And they may well</p> <p>6 have been his ideas, but I'm realizing now that it's not</p> <p>7 explicitly stated that way.</p> <p>8 He states a series of observations following a</p> <p>9 visit to his -- to David Walt's lab. So it's not clear</p> <p>10 entirely if this is stuff he's been told or if these are</p> <p>11 his ideas.</p> <p>12 And then in the second section he says "some</p> <p>13 brainstorming ideas."</p> <p>14 BY MR. SHULMAN:</p> <p>15 Q. Okay.</p> <p>16 A. But -- but with the caveat that I'm perhaps not</p> <p>17 fully qualified to make this assessment, I would say that</p> <p>18 Claim 1 does reflect what's described in this list.</p> <p>19 Q. Okay. All of Claim 1?</p> <p>20 MR. COSTAKOS: Objection. Same objections.</p> <p>21 THE WITNESS: What do you mean by "all of</p> <p>22 Claim 1"?</p> <p style="text-align: right;">Page 205</p>

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<p>1 BY MR. SHULMAN:</p> <p>2 Q. The entirety of Claim 1. Or are you just</p> <p>3 talking about paragraph A right now?</p> <p>4 A. I'm talking about Claim 1 -- you know, one</p> <p>5 would be inferring, I think, unless -- I'd have to read</p> <p>6 it more closely. I'd be inferring D, but I would say</p> <p>7 Claim 1 through -- A through C.</p> <p>8 Q. And D is the detection step?</p> <p>9 A. Detecting the presence or absence.</p> <p>10 Q. Right. And that's disclosed in the email as</p> <p>11 well, is it not?</p> <p>12 A. What I'm saying is --</p> <p>13 MR. COSTAKOS: Objection. Form, foundation</p> <p>14 THE WITNESS: May or may not be. I'd have to</p> <p>15 read it again more closely.</p> <p>16 BY MR. SHULMAN:</p> <p>17 Q. Let me direct you to page 1 of the March 9,</p> <p>18 1998, email at the paragraph numbered three. And about</p> <p>19 halfway down that paragraph, he says, "The readout is</p> <p>20 performed by one high resolution CCD chip." Do you see</p> <p>21 that?</p> <p>22 A. Yes, I see that.</p> <p style="text-align: right;">Page 206</p>	<p>1 Q. Okay. Now, you mentioned that the first</p> <p>2 portion of the March 9, 1998, email may just simply be</p> <p>3 some observations. Do you see that? I mean, did you say</p> <p>4 that?</p> <p>5 A. Yes, yes.</p> <p>6 Q. Okay.</p> <p>7 A. On -- looking at it again, I see now that these</p> <p>8 may be his ideas. I think we discussed them earlier as</p> <p>9 if they were his ideas. These may be his ideas or they</p> <p>10 may be information or concepts that were relayed to him</p> <p>11 as a result --</p> <p>12 Q. Okay.</p> <p>13 A. -- of his visit to David Walt's lab.</p> <p>14 For example, he's quite specific in certain</p> <p>15 places. You know, David showed the detection on beads</p> <p>16 sensitive down to -- talks about the dimensions of the</p> <p>17 bundles. So this list here reads possibly like</p> <p>18 information that was transferred to him.</p> <p>19 And then he says at the bottom, more</p> <p>20 explicitly, "I want to share some brainstorming ideas</p> <p>21 discussed with a scientific colleague this weekend."</p> <p>22 So it almost looks to me like it's in two</p> <p style="text-align: right;">Page 208</p>
<p>1 Q. Okay. And that's the detection step. Correct?</p> <p>2 MR. COSTAKOS: Same objections.</p> <p>3 THE WITNESS: Again, with the caveat that I'm</p> <p>4 not fully competent to testify, I think you'd still be</p> <p>5 inferring there that D that states "detecting the</p> <p>6 presence or absence of target analytes," he doesn't</p> <p>7 specifically say "the presence or absence of target</p> <p>8 analytes." It's not entirely clear what he means. He's</p> <p>9 talking about detecting, I think, the result of an assay,</p> <p>10 which may or may not be the presence of target analytes.</p> <p>11 BY MR. SHULMAN:</p> <p>12 Q. Okay. Apart from that, your reading of Claim 1</p> <p>13 is that it covers the subject matter disclosed in</p> <p>14 Dr. Kirk's email of March 9, 1998?</p> <p>15 MR. COSTAKOS: Objection. Form, foundation,</p> <p>16 competence, calls for legal conclusion.</p> <p>17 THE WITNESS: With the caveat that I'm probably</p> <p>18 not the best person to make that assessment, it -- it</p> <p>19 seems to -- to be -- from a fairly straightforward</p> <p>20 reading of it that -- it seems to me that Claim 1 would</p> <p>21 cover that.</p> <p>22 BY MR. SHULMAN:</p> <p style="text-align: right;">Page 207</p>	<p>1 parts, a preamble that sets a basis, sets the stage for</p> <p>2 him discussing ideas that are in the second part of the</p> <p>3 email.</p> <p>4 Q. Okay. And so the brainstorming ideas are that</p> <p>5 which begin with the Roman numeral I and continue</p> <p>6 thereafter?</p> <p>7 A. As far as I can see. And I can't really draw</p> <p>8 any conclusion about the first part, whether they're also</p> <p>9 his ideas or whether they were just information that he</p> <p>10 acquired on a visit.</p> <p>11 Q. Okay. And one of the brainstorming ideas</p> <p>12 appears on page 2 of the email under the heading Roman</p> <p>13 numeral II, "Screening Applications," paragraph A, where</p> <p>14 it says, "For instance, a low-cost fixture can be</p> <p>15 fabricated that would arrange 1536 fiber bundles to line</p> <p>16 up with the wells of one of the new CoStar plates that</p> <p>17 were developed with Corning." Right?</p> <p>18 MR. COSTAKOS: Objection. Form.</p> <p>19 THE WITNESS: Yes, he makes that statement.</p> <p>20 BY MR. SHULMAN:</p> <p>21 Q. Okay. Could you look at Claim 1 of the other</p> <p>22 patent, which is Exhibit 20, namely the 020 patent, and</p> <p style="text-align: right;">Page 209</p>

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<p>1 read that to yourself.</p> <p>2 A. Exhibit 20, Claim 1.</p> <p>3 Q. It's somewhat similar to the other claim.</p> <p>4 MR. COSTAKOS: I'm sorry. Is there a question</p> <p>5 pending, or is he just reading it?</p> <p>6 MR. SHULMAN: No. Just read it at the moment.</p> <p>7 MR. COSTAKOS: Okay.</p> <p>8 THE WITNESS: Yes.</p> <p>9 BY MR. SHULMAN:</p> <p>10 Q. Okay. Can you tell me whether you see any</p> <p>11 difference between the subject matter of Claim 1 of the</p> <p>12 020 patent and the subject matter disclosed in Dr. Kirk's</p> <p>13 March 9, 1998, email?</p> <p>14 MR. COSTAKOS: Objection. Form, foundation,</p> <p>15 competence, calls for a legal conclusion.</p> <p>16 THE WITNESS: So you would -- you were --</p> <p>17 earlier you directed me a particular section of the</p> <p>18 email. Now are you referring to the entire email or --</p> <p>19 BY MR. SHULMAN:</p> <p>20 Q. Well, we'll start out with the entire email,</p> <p>21 and if -- why don't you answer with respect to the entire</p> <p>22 email first.</p> <p style="text-align: right;">Page 210</p>	<p>1 he's describing in this email, yes.</p> <p>2 BY MR. SHULMAN:</p> <p>3 Q. Okay. Now, if we can put aside these two</p> <p>4 patents, we saw earlier that the claims of the 841 were</p> <p>5 allowed in December of 2008. That's Exhibit 21.</p> <p>6 Do you recall that after the claims were</p> <p>7 allowed, you executed an oath and declaration in which</p> <p>8 you stated that you and your co-inventors were the first</p> <p>9 and original inventors of the subject matter claimed in</p> <p>10 the application?</p> <p>11 A. I don't recall that. By the sound of it,</p> <p>12 presumably I did and there's a copy of it somewhere, but</p> <p>13 I don't remember specifically.</p> <p>14 Q. Yes. I will give it to you in a moment.</p> <p>15 MR. SHULMAN: Why don't we mark as Exhibit 22 a</p> <p>16 copy of a letter submitted to the patent office in</p> <p>17 connection with the 841 application dated January 29,</p> <p>18 2009, to which is attached a new declaration of</p> <p>19 inventorship.</p> <p>20 (Exhibit 22 was marked.)</p> <p>21 BY MR. SHULMAN:</p> <p>22 Q. Before we get to Exhibit 22, Dr. Chee, do you</p> <p style="text-align: right;">Page 212</p>
<p>1 A. With the caveat that we discussed earlier and</p> <p>2 that there is some modest amount of, I guess, inference</p> <p>3 or interpretation required, I don't think he fully</p> <p>4 explicitly states it, you know, but in terms of the --</p> <p>5 the format, the fixture, and so on, as we discussed</p> <p>6 earlier, but I think with that modest amount of</p> <p>7 inference, I -- it seems to me that this description here</p> <p>8 is covered by Claim 1.</p> <p>9 Q. So "this" doesn't always translate well in the</p> <p>10 transcript.</p> <p>11 So are you saying that Claim 1 of the 020</p> <p>12 describes what is set forth in the email?</p> <p>13 MR. COSTAKOS: Same objections.</p> <p>14 THE WITNESS: Yes, with the caveat that --</p> <p>15 again, the same caveats I mentioned earlier. One, that I</p> <p>16 may not be the -- I may not be fully qualified to make</p> <p>17 this evaluation. I'm going more on just a plain reading</p> <p>18 of it, that -- and that his description, I think, is not</p> <p>19 fully explicit. You do have to sort of do some</p> <p>20 combination of different sections, different statements.</p> <p>21 With those caveats, I would say that Claim 1</p> <p>22 description covers the -- the object or the system that</p> <p style="text-align: right;">Page 211</p>	<p>1 recall with which -- I hate to use "which" to refer to</p> <p>2 people -- but with whom you dealt with at the attorney or</p> <p>3 patent agent level in connection with the applications</p> <p>4 that led to the 841 and the 020?</p> <p>5 A. I don't. John Stuelpnagel dealt with the</p> <p>6 majority of the patent.</p> <p>7 Q. Do you remember a fellow by the name of Murphy?</p> <p>8 A. John Murphy, yes, I do.</p> <p>9 Q. Did you have dealings with him in connection</p> <p>10 with the applications for the patents-in-suit?</p> <p>11 A. I had dealings with him in connection with</p> <p>12 patents. I can't recall specifically which patents.</p> <p>13 Q. Okay. And did you have dealings with Nicky</p> <p>14 Espinosa concerning the patents?</p> <p>15 A. I did.</p> <p>16 Q. But you don't recall specifically?</p> <p>17 A. I don't recall specifically which patent. I'm</p> <p>18 sorry.</p> <p>19 And, you know, also, I think in -- very early</p> <p>20 on I remember this -- it seems like maybe it was pretty</p> <p>21 early -- I also had dealings with Robin Silva.</p> <p>22 Q. Yes.</p> <p style="text-align: right;">Page 213</p>

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<p>1 A. They would probably be the main people I</p> <p>2 interacted with on patents: Robin Silva, Nicky Espinosa,</p> <p>3 John Stuelpnagel, and John -- John Murphy.</p> <p>4 Q. Okay. Do you recall the attorney listed on the</p> <p>5 first page of Exhibit 22, Jerry Hefner, down at the</p> <p>6 bottom there?</p> <p>7 A. Actually, I don't.</p> <p>8 Q. Okay. Anyway, do you see this is a letter that</p> <p>9 was submitted by Mr. Hefner in connection with your</p> <p>10 application for the 841 patent?</p> <p>11 A. Yes.</p> <p>12 Q. And attached to this letter is a -- or in the</p> <p>13 letter itself he says, "We're providing herewith new</p> <p>14 copies of the declaration of inventorship pursuant to the</p> <p>15 examiner's request." Do you see that?</p> <p>16 A. Yes, on the first page.</p> <p>17 Q. Right. And then beginning on the second page,</p> <p>18 we see the -- the new declaration. Do you see that?</p> <p>19 A. Yes.</p> <p>20 Q. Okay. And the -- if you look at -- the second</p> <p>21 and third page are a copy of a declaration with</p> <p>22 Mr. Auger's signature. Correct?</p> <p style="text-align: right;">Page 214</p>	<p>1 statutory section. Is that correct?</p> <p>2 A. Yes.</p> <p>3 Q. Okay. Now, one of the statements that you</p> <p>4 swore to in this declaration is that, "I believe the</p> <p>5 inventors named below are the original and first</p> <p>6 inventors of the subject matter which is described and</p> <p>7 claimed and for which a patent is sought." Do you see</p> <p>8 that?</p> <p>9 A. Yes.</p> <p>10 Q. Okay. And the inventors named below were you</p> <p>11 and Stuelpnagel and Auger. Correct?</p> <p>12 A. Yes.</p> <p>13 Q. And you also swore that the following statement</p> <p>14 was true: "I have reviewed and understand the contents</p> <p>15 of the above identified application including the</p> <p>16 claims."</p> <p>17 A. Yes.</p> <p>18 Q. Do you see that?</p> <p>19 At the time that you swore to the truth of</p> <p>20 these -- well, first of all, those statements were true?</p> <p>21 A. Yes.</p> <p>22 Q. Okay. You did review and understand the</p> <p style="text-align: right;">Page 216</p>
<p>1 A. Yes.</p> <p>2 Q. And the fourth and fifth pages are a copy of</p> <p>3 the declaration with your signature. Correct?</p> <p>4 A. Yes.</p> <p>5 Q. And you signed this on January 26 of 2009?</p> <p>6 A. Yes.</p> <p>7 Q. Okay. And you acknowledged in this declaration</p> <p>8 above your signature block that any willful or false</p> <p>9 statements you make in the declaration could jeopardize</p> <p>10 the validity of your application or of the patent. Do</p> <p>11 you see that?</p> <p>12 A. I know it's there, but I'm just looking for it</p> <p>13 right now.</p> <p>14 MR. COSTAKOS: I think he's pointing to --</p> <p>15 THE WITNESS: Yes, I see that.</p> <p>16 BY MR. SHULMAN:</p> <p>17 Q. Okay. And you also declared that all</p> <p>18 statements made herein of your own knowledge were true,</p> <p>19 and all statements made on information and belief are</p> <p>20 believed to be true, and that these statements were made</p> <p>21 with knowledge that willful false statements and the like</p> <p>22 so made are punishable by fine or imprisonment under this</p> <p style="text-align: right;">Page 215</p>	<p>1 allowed claims at the time you signed this declaration?</p> <p>2 A. Yes. I -- I probably didn't, you know, go over</p> <p>3 them with a fine tooth comb. You know, I've obviously</p> <p>4 seen them before, but in general I did review.</p> <p>5 Q. Okay. And based upon what you knew as of the</p> <p>6 time you signed this declaration, you believed that you</p> <p>7 and Stuelpnagel and Auger were the original and first</p> <p>8 inventors of the subject matter being claimed. Correct?</p> <p>9 A. That's correct.</p> <p>10 Q. Okay. We've already gone over the -- the</p> <p>11 differences between the email and Claim 1.</p> <p>12 Had you known about the email at the time you</p> <p>13 signed this declaration and made the comparison that you</p> <p>14 did today, would you have sworn to the statement that</p> <p>15 you, Stuelpnagel, and Auger were the original and first</p> <p>16 inventors of Claim 1 of the 841 patent?</p> <p>17 MR. COSTAKOS: Objection. Form, calls for a</p> <p>18 legal conclusion.</p> <p>19 THE WITNESS: I think that, you know, if I had</p> <p>20 been presented this to sign after the -- seeing documents</p> <p>21 that we've seen and discussed today, I would have needed</p> <p>22 to go back and have further discussions and try and</p> <p style="text-align: right;">Page 217</p>

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<p>1 review and determine dates and so on to figure out if, in 2 fact, we were the first inventors. 3 There is now, I think, somewhat of an open 4 question in my mind. 5 BY MR. SHULMAN: 6 Q. Okay. Assuming that the brainstorming session 7 took place as Stuelpnagel testified and whatever you said 8 about it today in the summer of '98, and assuming that 9 there's no question about the date of Kirk's email -- 10 just make -- just assume that those are the correct 11 dates -- then had you been aware of the email at the time 12 you were asked to sign this declaration, would you have 13 sworn to the truth that the three of you are the original 14 and first inventors of the claimed subject matter in the 15 841 patent? 16 MR. COSTAKOS: Same objections. Form and calls 17 for legal conclusion. 18 THE WITNESS: I -- I probably would have 19 requested a meeting with -- with -- with at least John 20 Stuelpnagel and, you know, perhaps the attorneys who were 21 dealing with the matter to go over it and just understand 22 whether or not this -- this would still hold, that we</p> <p style="text-align: right;">Page 218</p>	<p>1 THE WITNESS: I think -- I think I basically 2 answered that. As I said, you know, I think -- I 3 couldn't be sure. And, you know, I think I have to do 4 more work to figure out if, in fact, it really was the 5 case that that brainstorming meeting was our first 6 conception of it. 7 I don't recall whether there was some, you 8 know, earlier conception, and I would want someone who is 9 more qualified and more expert in -- in, I guess -- 10 involved in the prosecution of this to compare and 11 contrast before I could determine whether or not I'd be 12 ready to go ahead and sign and say we were the first 13 inventors. It raises a question in my mind. 14 BY MR. SHULMAN: 15 Q. Okay. So would it be fair to say that if 16 somebody asked you today to swear that you were the 17 original and first inventor along with your co-inventors 18 of Claim 1 of the 841 patent, you couldn't swear to that 19 fact without conducting an investigation? 20 A. That's correct. 21 MR. COSTAKOS: Same objections. 22 BY MR. SHULMAN:</p> <p style="text-align: right;">Page 220</p>
<p>1 still believe we were the first inventors of this. 2 It certainly raises a -- would raise a question 3 in my mind. 4 BY MR. SHULMAN: 5 Q. Okay. So you certainly wouldn't have signed 6 this declaration without conferring with your fellow 7 inventors and perhaps an attorney? 8 A. I would -- 9 MR. COSTAKOS: Same objections. 10 THE WITNESS: I would have -- exactly. I would 11 have conferred with them. 12 BY MR. SHULMAN: 13 Q. Okay. As you sit here right now, obviously you 14 haven't conferred with an attorney or your fellow 15 inventors, but as you sit here right now and assuming 16 that the March 9 email has the correct date and the 17 brainstorming session took place in the summer of '98 as 18 people have testified, do you believe that the three of 19 you were the original and first inventors of Claim 1 of 20 the 841 patent? 21 MR. COSTAKOS: Same objections. Also asked and 22 answered.</p> <p style="text-align: right;">Page 219</p>	<p>1 Q. Now, at the time that you signed your 2 declaration, did you understand that the issue of 3 inventorship was an important one because patents are 4 only supposed to issue to the true and original 5 inventors? 6 A. Absolutely. 7 Q. And did you understand that the true identity 8 of the actual inventors is information that is material 9 to whether or not your application is patentable? 10 A. Absolutely. 11 MR. COSTAKOS: Objection. Form and competence. 12 BY MR. SHULMAN: 13 Q. Now, after Illumina was formed in the spring of 14 '98, it began to hire employees, such as yourself. 15 Correct? 16 A. Yes, that's correct. 17 Q. And is it correct that everyone who was hired 18 as an Illumina employee, since they began hiring 19 employees, has had an agreement with Illumina by which 20 they were obligated to assign to Illumina any inventions 21 they made? 22 MR. COSTAKOS: Objection. Foundation.</p> <p style="text-align: right;">Page 221</p>

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1 THE WITNESS: I -- I assume so. I -- I wasn't
2 involved in sort of HR matters or tracking those things,
3 but, certainly, yes, that would have been normal
4 practice.
5 BY MR. SHULMAN:
6 Q. And what was your understanding of the reason
7 that employees were obligated to assign to Illumina any
8 inventions they made?
9 MR. COSTAKOS: Objection. Foundation.
10 THE WITNESS: Well, so that Illumina has the
11 rights to go ahead and, you know, make products, offer
12 services and so on based on those inventions.
13 BY MR. SHULMAN:
14 Q. Okay. In the time period that you came up
15 with -- you and your fellow inventors came up with this
16 idea for the array matrix, did you regard that as an
17 important or valuable invention?
18 MR. COSTAKOS: Objection. Form.
19 THE WITNESS: I regarded it as -- I -- I think
20 of it -- I think in a slightly different way.
21 I regarded it as technically the right strategy
22 for us to develop something that was -- that was new and

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1 useful.
2 You know, patents are complicated enough things
3 that I don't sort of spend time trying to figure out at
4 the time which are -- you know, which are valuable or --
5 or so on. I think, you know, that gets determined in
6 time.
7 So I focus more on, Does this make sense to do?
8 Does this -- you know, Is this going to produce something
9 useful and new?
10 And at the time I felt, absolutely, that this
11 was going to produce something useful and new. I did not
12 see anything in -- you know, in my knowledge of the world
13 out there, that was like this. And it seemed to me there
14 was a very significant unmet need and a great opportunity
15 for us to develop this particular product.
16 BY MR. SHULMAN:
17 Q. Now, Illumina never hired Dr. Kirk, right, to
18 your knowledge?
19 A. Did not hire Dr. Kirk that I -- certainly not
20 as an employee, and I'm pretty sure not as -- in another
21 capacity, but, again, I couldn't be a hundred percent
22 sure.

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1 Q. Okay. But as far as you know --
2 A. As far as I know, he was never hired.
3 Q. All right. And as far as you know, he never
4 assigned to Illumina any of the inventions or ideas that
5 are set forth in his March 9, 1998, email. Correct?
6 MR. COSTAKOS: Objection. Form.
7 THE WITNESS: As far as -- as far as I know,
8 that's the case, but, again, I didn't handle those
9 matters.
10 BY MR. SHULMAN:
11 Q. But you and Stuelpnagel and Mr. Auger did
12 assign your rights in the 841 and 020 inventions to
13 Illumina at or about the time that you prepared the
14 applications for those patents. Correct?
15 A. We certainly assigned our rights to Illumina.
16 I -- I don't remember exactly when. Maybe it was even
17 taken care of right in the beginning in the employment
18 agreement. I don't know.
19 Q. Okay. But you did assign --
20 A. Yes.
21 Q. -- your rights to Illumina?
22 Okay. And did you understand, back in '98 when

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1 you entered into this obligation to assign rights to
2 Illumina, that if you didn't assign it to Illumina, then
3 Illumina wouldn't own it, but you yourself or your
4 co-inventors would own the rights to the invention?
5 MR. COSTAKOS: Objection. Form, foundation
6 THE WITNESS: I -- I can't say I understood --
7 I'm not even sure it sort of makes sense because --
8 because prior to being employees of Illumina, then --
9 then I think that there was no obligation on our part to
10 assign to Illumina.
11 Once we were employees, we -- by virtue of that
12 agreement, we had agreed --
13 BY MR. SHULMAN:
14 Q. Fair enough.
15 A. -- to make that assignment. So I'm not sure
16 that --
17 Q. Fair enough. You're right. You're right.
18 That was a poorly phrased question. Let me ask it a
19 different way.
20 If you had named Dr. Kirk as a co-inventor
21 along with the rest of you guys on the 841 and the 020
22 patents, he did not have an obligation to assign his

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<p>1 rights to Illumina. Correct?</p> <p>2 MR. COSTAKOS: Objection. Competence.</p> <p>3 THE WITNESS: Assuming he was not an employee</p> <p>4 of the company, which I'm sure he wasn't, and assuming he</p> <p>5 didn't have any other agreement with Illumina -- there</p> <p>6 was none to my knowledge -- then I think most likely</p> <p>7 that's correct, but I'm probably not the person to</p> <p>8 determine that.</p> <p>9 BY MR. SHULMAN:</p> <p>10 Q. And if he didn't have to assign his ownership</p> <p>11 rights in the invention of the 841 and 020 had he been</p> <p>12 named, then he would have owned his rights. Correct?</p> <p>13 MR. COSTAKOS: Objection. Foundation,</p> <p>14 compound.</p> <p>15 THE WITNESS: I think the competence is a great</p> <p>16 objection here.</p> <p>17 He would have -- he would have owned some sort</p> <p>18 of right. And exactly how that's divided or defined, you</p> <p>19 know, I -- I'm not sure I'm competent to answer that.</p> <p>20 BY MR. SHULMAN:</p> <p>21 Q. Okay. He would own his rights in the same</p> <p>22 sense that you owned the rights or nGenetics owned the</p> <p style="text-align: right;">Page 226</p>	<p>1 Q. That's right. Half of zero is still zero?</p> <p>2 A. Still zero.</p> <p>3 Q. But you didn't think this application was worth</p> <p>4 nothing, did you?</p> <p>5 MR. COSTAKOS: Objection. Form.</p> <p>6 THE WITNESS: I had no -- quite frankly, I had</p> <p>7 no opinion on that at the time.</p> <p>8 MR. SHULMAN: Fair enough.</p> <p>9 THE WITNESS: No opinion. I -- again, I</p> <p>10 thought of it as -- as -- that the thing that we were</p> <p>11 going to invent to develop and turn into product -- had a</p> <p>12 strong opinion that would be worth something, but the</p> <p>13 patent per se, not really in a realm that I sort of</p> <p>14 thought of.</p> <p>15 BY MR. SHULMAN:</p> <p>16 Q. Okay. Do you know whether an invention</p> <p>17 disclosure form was prepared with respect to this</p> <p>18 brainstorming idea that the three of you came up with in</p> <p>19 the summer of '98?</p> <p>20 A. I don't recall.</p> <p>21 Q. Was it the practice at Illumina at the time to</p> <p>22 prepare invention disclosure forms?</p> <p style="text-align: right;">Page 228</p>
<p>1 rights in your decoding idea which was developed before</p> <p>2 Illumina came into existence. Correct?</p> <p>3 MR. COSTAKOS: Same objection. Competence.</p> <p>4 THE WITNESS: I don't know. I -- I'm pretty</p> <p>5 sure he would have owned rights. I'm not sure exactly</p> <p>6 how to define those. There are probably people much</p> <p>7 better qualified than I am to do that.</p> <p>8 BY MR. SHULMAN:</p> <p>9 Q. Did you understand in 1998 that if Illumina had</p> <p>10 to share the ownership of the 841 and 020 applications</p> <p>11 with an independent third party, such as, for example,</p> <p>12 Dr. Kirk, the value of Illumina's ownership interest</p> <p>13 would be diminished?</p> <p>14 MR. COSTAKOS: Objection. Form, foundation</p> <p>15 THE WITNESS: You're basically asking for my</p> <p>16 opinion. And, yes, I would think it -- it sort of seems</p> <p>17 fairly self-evident to me that if you own something</p> <p>18 completely, then you have -- versus owning something</p> <p>19 partly and sharing part of it with someone else, then</p> <p>20 you'd have a higher value, as long as that -- the value</p> <p>21 of the thing was above zero.</p> <p>22 BY MR. SHULMAN:</p> <p style="text-align: right;">Page 227</p>	<p>1 A. At some point it was practice, and that was a</p> <p>2 very early stage. So I'm almost thinking that it was not</p> <p>3 yet a practice, but I don't recall.</p> <p>4 Q. Do you recall that Dr. Czarnik made some claims</p> <p>5 in the form of a lawsuit against Illumina, which I</p> <p>6 believe was filed after you left the company, in which he</p> <p>7 asserted that he should have been named as an inventor on</p> <p>8 one or more patents and patent applications that named</p> <p>9 Stuelpnagel as an inventor?</p> <p>10 A. I recall hearing about that.</p> <p>11 Q. And are you aware that that lawsuit was</p> <p>12 settled?</p> <p>13 A. I think I recall hearing about that as well.</p> <p>14 Q. And do you recall that Illumina --</p> <p>15 MR. COSTAKOS: Hold on. I just want to let you</p> <p>16 know that I don't think he's privy to anything regarding</p> <p>17 the settlement. So if you're going to go into that, he's</p> <p>18 not your guy.</p> <p>19 MR. SHULMAN: I have one more question. That's</p> <p>20 it. I'm not going to show him --</p> <p>21 MR. COSTAKOS: Well, I don't know what your</p> <p>22 question is going to be. I'm just putting you on notice</p> <p style="text-align: right;">Page 229</p>

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<p>1 of that.</p> <p>2 BY MR. SHULMAN:</p> <p>3 Q. Did you hear that Illumina, as -- strike that.</p> <p>4 Did your hear that, as a consequence of that</p> <p>5 lawsuit, Illumina added Dr. Czarnik as an inventor on</p> <p>6 several patents and patent applications?</p> <p>7 A. I -- I heard discussion of that. I -- I'm not</p> <p>8 sure whether it was -- I heard that he was added or they</p> <p>9 were going to add or they were thinking of adding, but I</p> <p>10 definitely heard discussion of it.</p> <p>11 Q. All right. Did Dr. Czarnik, to your view, in</p> <p>12 your view, and to the best of your memory, play any role</p> <p>13 in coming up with this idea of bundling together several</p> <p>14 bundles of fiberoptics and inserting them simultaneously</p> <p>15 into individual wells of a well plate?</p> <p>16 MR. COSTAKOS: Objection. Form.</p> <p>17 THE WITNESS: You know, I -- I don't think I</p> <p>18 could say. My -- my -- again, my -- my general</p> <p>19 impression, sitting here currently, is that I don't think</p> <p>20 he did. But as I said earlier, I think, you know, my</p> <p>21 recollection is -- is -- is sort of vague enough that</p> <p>22 it's possible he was even present at that meeting that</p> <p style="text-align: right;">Page 230</p>	<p>1 eight optical fiber bundles, and then these assembled</p> <p>2 into -- with 12 of them into a 96 block? Technical --</p> <p>3 technical details I remember working out. I did the</p> <p>4 calculations just to figure out, you know, how many</p> <p>5 different types of beads we could have in there. Should</p> <p>6 it be 96? Should it be something else?</p> <p>7 And -- and my impression is maybe the meeting</p> <p>8 that John Stuelpnagel was referring to emphasized more</p> <p>9 that aspect of it. I'm not even convinced that he was</p> <p>10 correct now that that was where the original concept came</p> <p>11 up. It may well have been, but in my recollection, there</p> <p>12 was more discussion involving Steve -- Steve Auger around</p> <p>13 the design -- I would say, perhaps, the design of such a</p> <p>14 device and, you know, the implementation of such a</p> <p>15 device.</p> <p>16 I -- part of the problem is not just you</p> <p>17 polluting me with information here.</p> <p>18 Part of the problem is that at this point in</p> <p>19 time, it seems such a -- I know this is not the right</p> <p>20 word to use in a patent context, but sort of an obvious</p> <p>21 follow-on, that it seems quite possible to me that even</p> <p>22 earlier in the discussion, earlier in the formation of</p> <p style="text-align: right;">Page 232</p>
<p>1 John Stuelpnagel referred to. I don't think he was, but</p> <p>2 if he'd been there, it wouldn't shock me.</p> <p>3 So I -- my impression is he didn't contribute</p> <p>4 to this, but, you know, I couldn't be a hundred percent</p> <p>5 sure.</p> <p>6 BY MR. SHULMAN:</p> <p>7 Q. Okay. Earlier I showed you testimony from</p> <p>8 Dr. Stuelpnagel on two prior occasions, one at the trial</p> <p>9 of the first Affymetrix case, and another at his</p> <p>10 deposition in the first Affymetrix case describing the</p> <p>11 brainstorming session in the summer of '98.</p> <p>12 I realize it's difficult to flush your mind of</p> <p>13 what I've now, you know, polluted you with, but do you</p> <p>14 have an independent recollection separate and apart from</p> <p>15 Dr. Stuelpnagel's testimony about how this idea of</p> <p>16 dipping multiple bundles into microtiter well plates came</p> <p>17 about?</p> <p>18 A. I'm struggling with that a little bit now</p> <p>19 because I'm -- I'm pretty sure that -- I'm pretty sure</p> <p>20 that -- I remember having more than one meeting where we</p> <p>21 were discussing more the specifics of how to make such a</p> <p>22 device. Should it be made in sort of columns of eight,</p> <p style="text-align: right;">Page 231</p>	<p>1 Illumina, we may have been discussing this parallel</p> <p>2 dipping format. It seems possible to me.</p> <p>3 Q. When you said that, you know, it's perhaps not</p> <p>4 appropriate to use the term in the patent context, but</p> <p>5 you said, "it is obvious as a follow-on," what is the</p> <p>6 "it" in that response?</p> <p>7 A. Oh.</p> <p>8 MR. COSTAKOS: Objection. Form.</p> <p>9 THE WITNESS: I think I was saying that if you</p> <p>10 have this -- this prong or toothpick-type object with</p> <p>11 beads on the end of it and you're already dipping it into</p> <p>12 tubes, that it may then be a pretty natural evolution to</p> <p>13 think about dipping it into -- dipping multiple of them</p> <p>14 into wells of a plate.</p> <p>15 And, again, you know, sometimes what seems</p> <p>16 obvious after the fact is by no means obvious before the</p> <p>17 fact. Certainly nobody was doing it at the time.</p> <p>18 What I was trying to say is that it may well</p> <p>19 have been that in the course of these discussions early</p> <p>20 on that we actually did discuss this concept prior to the</p> <p>21 meeting that John Stuelpnagel remembers.</p> <p>22 I don't recollect, but it wouldn't shock me if</p> <p style="text-align: right;">Page 233</p>

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<p>1 we did.</p> <p>2 BY MR. SHULMAN:</p> <p>3 Q. So apart from what Stuelpnagel has said, do you</p> <p>4 have any specific recollection about when you came up</p> <p>5 with the concept of bundling together these bundles into</p> <p>6 an array of arrays and then dipping them simultaneously</p> <p>7 into a microtiter well plate?</p> <p>8 MR. COSTAKOS: Objection. Form.</p> <p>9 THE WITNESS: Unfortunately, I don't.</p> <p>10 MR. SHULMAN: Fair enough. It's a long time</p> <p>11 ago.</p> <p>12 BY MR. SHULMAN:</p> <p>13 Q. Are you familiar with the acronym SNP?</p> <p>14 A. Yes, I am.</p> <p>15 Q. Okay. And that's a single nucleotide</p> <p>16 polymorphism. Right?</p> <p>17 A. Yes.</p> <p>18 Q. Okay. Is it correct that before you came up</p> <p>19 with the inventions disclosed in your first application</p> <p>20 for the 841 and the 020 patents, which was filed back in</p> <p>21 December of '98, that it was known that hundreds of SNPs</p> <p>22 could be simultaneously genotyped accurately and reliably</p> <p style="text-align: right;">Page 234</p>	<p>1 when you're testing many SNPs. And the error rates that</p> <p>2 were in the systems at the time would not have allowed</p> <p>3 the kinds of large scale studies that are carried out</p> <p>4 today. That was a real issue.</p> <p>5 BY MR. SHULMAN:</p> <p>6 Q. Can you look at Exhibit 19, please, which is</p> <p>7 the 841 patent, and if you would turn to column 40. And</p> <p>8 if you drop down toward the bottom of that column to</p> <p>9 line 56, and at the end of that line there's a sentence</p> <p>10 that begins with the word "multiplex." Do you see that?</p> <p>11 A. Yes.</p> <p>12 Q. And the sentence reads, "Multiplex PCR</p> <p>13 amplification of SNP loci with subsequent hybridization</p> <p>14 to oligonucleotide arrays has been shown to be an</p> <p>15 accurate and reliable method of simultaneously genotyping</p> <p>16 at least hundreds of SNPs."</p> <p>17 And then you cite to two publications for</p> <p>18 support for that statement. Correct?</p> <p>19 A. Yes.</p> <p>20 Q. You did make that statement in your</p> <p>21 application?</p> <p>22 A. It seems so. And I guess that proves</p> <p style="text-align: right;">Page 236</p>
<p>1 by hybridizing them to the oligonucleotide arrays that</p> <p>2 were used in the prior art?</p> <p>3 MR. COSTAKOS: Objection. Form, foundation,</p> <p>4 competence.</p> <p>5 THE WITNESS: I think --</p> <p>6 MR. COSTAKOS: Incomplete.</p> <p>7 THE WITNESS: Certainly I was familiar with</p> <p>8 work at Affymetrix. I was involved in it.</p> <p>9 To tie -- at the time I think it was hundreds</p> <p>10 of -- of SNPs or "snips" as we sometimes call them.</p> <p>11 There were real questions in my mind about just</p> <p>12 how accurate and complete and reproducible that was. It</p> <p>13 was, you know, good enough to show in the form of a</p> <p>14 scientific publication.</p> <p>15 There were very real questions in my mind</p> <p>16 whether that -- whether that was a solved problem. In</p> <p>17 fact -- in fact, my feeling was that it wasn't a solved</p> <p>18 problem.</p> <p>19 And, you know, many geneticists, I think, felt</p> <p>20 that it wasn't a solved problem in that in order to</p> <p>21 accurately map linkages between phenotypes and the</p> <p>22 genome, you actually have to have a pretty low error rate</p> <p style="text-align: right;">Page 235</p>	<p>1 everything is relative.</p> <p>2 So, you know, I think we did have -- it's been</p> <p>3 a long time now. That "Wang et al." publication is one</p> <p>4 that I'm an author on. The other one I don't quite</p> <p>5 recall.</p> <p>6 But we did have some data on the -- just how</p> <p>7 accurate and just how reliable it was. And that wouldn't</p> <p>8 be sufficiently accurate or reliable, I think, for very</p> <p>9 large scale studies that now use hundreds of thousands of</p> <p>10 SNPs.</p> <p>11 By the standards of the day, it was, I think,</p> <p>12 pretty accurate and reliable, but from today's</p> <p>13 perspective, not.</p> <p>14 BY MR. SHULMAN:</p> <p>15 Q. Fair enough. Things have improved.</p> <p>16 A. Yeah.</p> <p>17 Q. So SNPs were used as target analytes in</p> <p>18 array-based systems before you guys came up with this</p> <p>19 particular invention. Correct?</p> <p>20 A. Oh, certainly.</p> <p>21 MR. COSTAKOS: Objection. Form.</p> <p>22 ///</p> <p style="text-align: right;">Page 237</p>

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<p>1 BY MR. SHULMAN:</p> <p>2 Q. Okay. And the arrays of your invention is --</p> <p>3 that are described in this 841 patent could be</p> <p>4 substituted for the prior art arrays, such as the</p> <p>5 Affymetrix arrays, to also perform simultaneous</p> <p>6 genotyping of SNPs by hybridizing the SNPs to</p> <p>7 oligonucleotides. Correct?</p> <p>8 MR. COSTAKOS: Objection. Form incomplete.</p> <p>9 THE WITNESS: Yes, they could.</p> <p>10 BY MR. SHULMAN:</p> <p>11 Q. Now, is it correct that as early as 1996 it was</p> <p>12 known that prior art oligonucleotide arrays were used to</p> <p>13 quantitate a specific mRNA in the presence of total</p> <p>14 cellular mRNA?</p> <p>15 MR. COSTAKOS: Objection. Form, foundation</p> <p>16 THE WITNESS: So -- so -- I'm not sure of the</p> <p>17 exact date, but -- but -- but, yes, that sounds about</p> <p>18 right. 1996 sounds about right.</p> <p>19 BY MR. SHULMAN:</p> <p>20 Q. Okay. And in your 841 and 020 patent</p> <p>21 specifications, you disclosed that the new arrays of your</p> <p>22 invention could also be used for that purpose. Correct?</p> <p style="text-align: right;">Page 238</p>	<p>1 (Recess.)</p> <p>2 VIDEOGRAPHER: We're on the record at 3:29 p.m.</p> <p>3 MR. SHULMAN: Just a couple more questions,</p> <p>4 Dr. Chee.</p> <p>5 BY MR. SHULMAN:</p> <p>6 Q. If you'd turn back to Exhibit 19, which is the</p> <p>7 841 patent, and if you'd look, please, at Claim 1,</p> <p>8 paragraph D, and that's the portion of the claim that</p> <p>9 calls for detecting the presence or absence of the target</p> <p>10 analytes.</p> <p>11 A. I've said target analytes, yes.</p> <p>12 Q. In the Walt technology that Walt developed</p> <p>13 before you and Stuelpnagel became involved with his</p> <p>14 technology, he detected the presence or absence of target</p> <p>15 analytes. Correct?</p> <p>16 MR. COSTAKOS: Objection. Form.</p> <p>17 THE WITNESS: I'm trying to remember the -- you</p> <p>18 might have to point me to a particular --</p> <p>19 BY MR. SHULMAN:</p> <p>20 Q. I can help you out if you want.</p> <p>21 A. Yeah, because...</p> <p>22 Q. Let me show you that article. Let's look again</p> <p style="text-align: right;">Page 240</p>
<p>1 A. You know, I can't remember now. There's a lot</p> <p>2 of stuff in here, but I assume that if you --</p> <p>3 Q. Let me help you out.</p> <p>4 A. You tell me so it's here.</p> <p>5 Q. If you look at page -- page?</p> <p>6 If you look at column 44 up towards the top at</p> <p>7 about line 4, it says, "One approach that has been</p> <p>8 developed as a basis of mRNA quantitation makes use of a</p> <p>9 multiple match and mismatch probe pairs" -- "probe</p> <p>10 pairs," citing to some 1996 Lockhart article --</p> <p>11 A. Yes.</p> <p>12 Q. -- that you incorporated by reference.</p> <p>13 And then you go on to describe how you would do</p> <p>14 it using your new arrays.</p> <p>15 A. Yes.</p> <p>16 Q. Correct?</p> <p>17 MR. SHULMAN: Okay. Why don't we take a</p> <p>18 few-minute break. I'm close to being done.</p> <p>19 THE WITNESS: Okay.</p> <p>20 MR. SHULMAN: I just want to check my notes.</p> <p>21 THE WITNESS: Sure.</p> <p>22 VIDEOGRAPHER: Off the record at 3:02 p.m.</p> <p style="text-align: right;">Page 239</p>	<p>1 at that article that we look at earlier, which is</p> <p>2 Exhibit 4.</p> <p>3 A. Exhibit 4. Here we go.</p> <p>4 Q. And if you look at page 1 --</p> <p>5 MR. COSTAKOS: Hold on just one second. Just</p> <p>6 let me get there.</p> <p>7 BY MR. SHULMAN:</p> <p>8 Q. Sure. In the left-hand column of page 1, the</p> <p>9 very last sentence that begins, "The detection."</p> <p>10 A. Yes.</p> <p>11 Q. And says, "The detection system consists of a</p> <p>12 modified epifluorescence microscope with the optics</p> <p>13 optimized to couple with an optical fiber. The detector</p> <p>14 used was a Peltier-, "P-e-l-t-i-e-r, "cooled CCD camera,"</p> <p>15 skipping over the model number. "When cyanuric</p> <p>16 chloride-activated oligonucleotide probes were</p> <p>17 immobilized directly on an amine-functionalized surface,</p> <p>18 a signal from the hybridized target was observed.</p> <p>19 However, if the amine-functionalized fiber was first</p> <p>20 modified with glutaraldehyde and then treated with</p> <p>21 polylysine, the signal was fivefold higher," et cetera,</p> <p>22 et cetera.</p> <p style="text-align: right;">Page 241</p>

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<p>1 So he did detect the presence or the absence of 2 target analytes. Correct?</p> <p>3 A. So I think he was doing that. I -- and I just 4 wanted clarification because -- and I'm not sure whether 5 this is important or -- or not, but this is a -- in my 6 mind, a somewhat different technology.</p> <p>7 This is individual optical fibers that were 8 derivatized on the surface.</p> <p>9 And in general what we've been talking about is 10 not individual fibers, but these etched bundles with 11 beads in them.</p> <p>12 But, yes, I think in this technology, looking 13 at some of the pictures in general, he was detecting 14 whether analytes were present or absent, by the looks of 15 it.</p> <p>16 Q. He had several fibers in a bundle. Correct?</p> <p>17 A. He had individual fibers that were bundled 18 together but not fused into a monolithic block. And 19 so -- so these were, I think, bigger fibers. You could 20 only do a small handful of them. There was no way to 21 effectively manufacture these higher density, you know, 22 larger scale sort of systems. It's a very different</p> <p style="text-align: right;">Page 242</p>	<p>1 trying to compare it to Exhibit 19 right now.</p> <p>2 A. Okay. He had a bundle of fibers.</p> <p>3 Q. And the fibers had a tiny well etched into 4 their distal surface. Correct?</p> <p>5 A. You know, I don't think so. That's what I'm -- 6 one of the distinctions I'm trying to make. This is -- I 7 think -- let's have a look at it again. I mean, I might 8 be wrong. Maybe it does. But at least my recollection 9 is they don't have fibers -- wells etched in them.</p> <p>10 Q. Well, he had "synthetic oligonucleotide 11 hybridization probes were immobilized on one end of an 12 optical fiber 200 micrometers in diameter." Correct?</p> <p>13 A. That's right. So there's -- that's exactly 14 right. So there's a -- a -- I know it may not seem this 15 way, but there's a big distinction between these two 16 technologies.</p> <p>17 Q. I understand you're saying that, but that's not 18 my question.</p> <p>19 A. Okay. So in this case he has individual 20 fibers, no well, no bead in well, you know, bioactive 21 molecules attached directly on the end of the fiber, and 22 then he bundles fibers together. That's what he has, and</p> <p style="text-align: right;">Page 244</p>
<p>1 technology. Much more limited technology.</p> <p>2 Q. Yeah, but I'm just asking about -- he did have 3 a bundle of fibers that were bundled together, correct, 4 although very -- a much smaller number of fibers than 5 what you guys came up with?</p> <p>6 A. Pretty -- I know it seems like a subtle 7 distinction, but it's a really important distinction. He 8 had individual fibers that were -- that were sort of 9 distinct and then bundled together. It's -- it has a 10 huge impact on what you can do with it, you know, versus 11 this monolithic fused block, which is etched and beads 12 dropped into them. So it's quite distinct in that 13 respect, at least in my mind.</p> <p>14 Q. I understand that, but I'm trying to focus on 15 something different.</p> <p>16 He did have a bundle of fibers. Correct?</p> <p>17 MR. COSTAKOS: Objection. Form.</p> <p>18 THE WITNESS: He had a bundle of fibers 19 somewhat, I think, significantly distinct from the 20 technology we're talking about in -- in this Exhibit 19.</p> <p>21 BY MR. SHULMAN:</p> <p>22 Q. Okay. But that wasn't my question. I'm not</p> <p style="text-align: right;">Page 243</p>	<p>1 if that's your question, the answer is yes.</p> <p>2 Q. Okay. And then he would dip them into this 3 Eppendorf tube that had the target solution as described 4 in Column 1 or the left-hand column, rather, of page 1 of 5 Exhibit 4?</p> <p>6 A. Yes.</p> <p>7 Q. And thereafter he would detect the presence or 8 absence of the target analyte on the fiber. Correct?</p> <p>9 MR. COSTAKOS: Objection. Form.</p> <p>10 THE WITNESS: Let's see. Is he -- I think he 11 was detecting presence and absence. That's what figure 2 12 looks like. And I think, also, figure 4.</p> <p>13 Yes, he was detecting the presence or absence.</p> <p>14 BY MR. SHULMAN:</p> <p>15 Q. Okay. And even though this article, Exhibit 4, 16 may not use beads, in his laboratory he had developed 17 fibers that had beads to which bioactive agents were 18 designed to be attached. Then those fibers with the 19 beads would be dipped into a target analyte, and then the 20 presence or absence of the target analyte was going to be 21 detected by some CCD camera. Correct?</p> <p>22 MR. COSTAKOS: Objection. Form.</p> <p style="text-align: right;">Page 245</p>

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<p>1 THE WITNESS: Basically, yes. Optical fiber 2 bundles, not individual fibers, as in this case. But 3 optical fiber bundles etched into wells with beads in 4 them would -- would then be used to analyze samples with 5 DNA and other analytes. 6 BY MR. SHULMAN: 7 Q. And then he would detect the presence or the 8 absence of the target analyte on any given fiber? 9 A. I -- I -- 10 MR. COSTAKOS: Objection. Foundation. 11 THE WITNESS: -- think that's what he was 12 doing. It's long enough gone now, I don't remember exact 13 experiments. But I think it's safe to say that the 14 answer to that is yes. 15 MR. SHULMAN: Okay. Subject to the production, 16 if there will be one -- I still haven't heard from you 17 about the invention disclosure form -- I have no further 18 questions. 19 MR. COSTAKOS: Okay. I had a couple questions. 20 Do you mind if I take your little pad of 21 exhibit numbers so I can just stick them on myself there? 22 I don't have that many, but rather --</p> <p style="text-align: right;">Page 246</p>	<p>1 Q. At the top, okay. 2 Can you tell me what this is? 3 A. It's a grant application submitted to NIH. 4 Q. Okay. And approximately when was this grant 5 application put together? 6 A. Well, I can see here that it was -- it was 7 submitted May 6, 1998, or very shortly thereafter, by the 8 signature at the bottom. 9 Q. Okay. And is that your signature at the 10 bottom? 11 A. Yes. And then John Stuelpnagel's below that, 12 and -- 13 Q. You recognize his signature? 14 A. Yes, I recognize his signature. 15 And so I don't recall exactly when it was put 16 together, but I would say probably very roughly in the -- 17 sometime in the preceding, let's say, month or so. 18 Q. Okay. Now, this date, May 6, 1998, that's 19 before your official start date at Illumina. Is that 20 right? 21 A. That's correct. 22 Q. Okay. So in the period before your official</p> <p style="text-align: right;">Page 248</p>
<p>1 MR. SHULMAN: I have mine all written down if 2 you want to use my numbers. 3 MR. COSTAKOS: I'm not going to use those. 4 We've already been -- I mean, if I do -- 5 MR. SHULMAN: Oh, you have some other ones 6 MR. COSTAKOS: Yeah, I was going to use 7 her Post-it Notes. 8 MR. SHULMAN: Oh. 9 MR. COSTAKOS: Okay. I've got a couple 10 questions here. 11 (Exhibit 23 was marked.) 12 13 EXAMINATION 14 BY MR. COSTAKOS: 15 Q. Dr. Chee, I'm going to hand you first what I've 16 marked as Exhibit 23 to your deposition. This bears 17 production Nos. ILL 0001016 through 1060. See if 18 everyone has -- if everyone's is the same. 19 Yes, okay. 20 And it's called "Grant Application." Do you 21 see that? 22 A. At the top here, yes.</p> <p style="text-align: right;">Page 247</p>	<p>1 start date at Illumina, what were you doing at the 2 company with regard to the company? 3 A. John Stuelpnagel and I were essentially putting 4 the company together. He was working on licensing the 5 beads and wells technology from Tufts University, and I 6 was figuring out how we would turn this platform into a 7 useful system specifically for analyzing SNPs, but also 8 for other applications. So I was thinking through a lot 9 of the technical and scientific details of what we would 10 do. 11 Q. Okay. 12 A. We were doing other things like coming up with 13 the name for the company. You know, I was -- at some 14 point I made a trip to Tufts to look at the technology to 15 satisfy myself that it was -- really was something that 16 we could build on. 17 Q. Did you make the trips -- the trip to Tufts 18 before you put the grant application together? 19 A. You know, I -- I can't remember. I think it's 20 pretty likely that I did, but I honestly can't remember. 21 Q. Okay. And what was the purpose of the very 22 first trip that you made to Tufts?</p> <p style="text-align: right;">Page 249</p>

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<p>1 A. To -- it was for me to assess the technology. 2 That -- it's possible that John Stuelpnagel may have had 3 additional purpose, you know, perhaps for me to meet 4 David Walt and have David Walt provide some feedback on 5 my suitability to be involved in this company, but as far 6 as I was concerned, it was for me to evaluate the 7 technology. 8 Q. For what purpose? Why did you want to evaluate 9 the technology? 10 A. I wanted to figure out for myself whether this 11 was something that was worth me spending, you know, 12 possibly years of effort on to develop into something 13 that would be -- would be useful, useful to the 14 scientific community. 15 Q. Did you go to -- strike that. 16 Was it your first visit to Tufts before you 17 made your decision to join Illumina? 18 A. In -- in -- as far as I can recollect, yes. 19 You know, I -- I was keen to join Illumina, and I was 20 checking off sort of a small number of boxes before 21 making the decision. As best I can recollect, that was a 22 key one for me.</p> <p style="text-align: right;">Page 250</p>	<p>1 the document, or at least has the 27 on the bottom of it, 2 feel free to look at whatever you need to to help you 3 answer the question. But I want to direct your 4 attention, in particular, to the third full paragraph on 5 that page, which says, quote, "In addition, there is the 6 potential to parallelize the processing of fibers. For 7 example, a 96-fiber system could provide a genotyping 8 throughput of up to 1 million assays per cycle," 9 et cetera, et cetera, et cetera. Do you see that? 10 A. Yes, I do. 11 Q. Okay. What was this a description of, to your 12 recollection? 13 A. Let's read the whole paragraph. I -- actually, 14 I -- so -- so this is a description of the array matrix 15 format. 16 This was still so early that I -- I think we 17 were using terminology that I think probably came 18 originally from David Walt's lab, I suspect, or -- but 19 we -- we became, you know, more accurate in our 20 terminology a bit later. 21 I didn't like "fibers" at some point because 22 there was confusion between an individual fiber and this</p> <p style="text-align: right;">Page 252</p>
<p>1 Q. Okay. Now, if you look at the second-to-last 2 page of this document which it ends in 1059, there's a 3 letter, do you see that, on Tufts letterhead from 4 Dr. Walt to you dated April 29, 1998? Do you see that? 5 A. Yes, I do. 6 Q. Just take a moment and look at this relatively 7 short letter, and then I'll have a question for you about 8 it. 9 A. Okay. I've looked at it. 10 Q. Okay. So in this letter Dr. Walt says that he 11 would be pleased to act as a scientific advisor for your 12 project, quote, "Randomly Ordered DNA Arrays for SNP 13 Discovery and Typing," end quote. Do you see that? 14 A. Yes. 15 Q. Does this refresh your recollection in any way 16 as to whether you visited Tufts before or after this 17 letter? 18 A. It doesn't. I really wish I could remember 19 when I visited Tufts. This would simplify a lot of 20 things, it seems, but it doesn't. 21 Q. Okay. That's fine. That's fine. 22 If you turn to page 1042, this is page 27 of</p> <p style="text-align: right;">Page 251</p>	<p>1 bundle of many fibers fused together. So at some point 2 we changed terminology to, you know, "fiber bundle," but 3 at this time, the word "fiber" actually meant "fiber 4 bundle." It's pretty clear from this description. So 5 this is a description of the array matrix. 6 Q. Okay. And so is it fair to say then that at 7 least you had thought of the array matrix as of May 6, 8 1998? 9 A. Seems very clear that that was the case. 10 Q. Okay. Whatever happened to this grant 11 application? In other words, what was the -- what was 12 the result? 13 A. It didn't get funded. It -- it didn't get a 14 good enough score to get funded, and -- let's see. 15 So I -- let me just have a quick look here. 16 Yes. And I -- I think one key reason it didn't 17 get funded was that the reviewers did not understand this 18 decoding concept properly. And so, subsequently, I spoke 19 to the program manager at NIH, and I explained this to 20 them. 21 They accepted a scaled-down application based 22 on this that just focused on decoding and they funded</p> <p style="text-align: right;">Page 253</p>

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1 that, but this didn't get funded.
2 Q. Okay. Basically the reviewers didn't think it
3 would work?
4 A. Didn't think it would work.
5 (Exhibit 24 was marked.)
6 BY MR. COSTAKOS:
7 Q. I'm going to hand you what I've marked as
8 Exhibit 24 to your deposition. This document bears
9 production Nos. ILL 0001072 through 1079. And it says at
10 the top "Summary Statement."
11 Can you tell me just in general what this is?
12 A. This is a very standard evaluation of a grant
13 application. I think, in this case, this particular
14 grant application, that's the first level of review for
15 grant applications by NIH, it says, sort of a scientific
16 merit review.
17 Q. Okay. So is this the document where the
18 reviewers tell you that they're not going to fund your
19 grant?
20 A. There -- it's a -- almost, but not quite.
21 It's a two-stage process. The reviewers rate
22 your application, and they give you a score. In this

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1 case, just below the title there's a, what's called,
2 priority score 296.
3 There's a second stage review that determines
4 what gets funded, and it tends to go very closely along
5 the lines of the priority score, but not always.
6 So this score was a fairly poor score. It was
7 in the range where it would not be expected to be funded.
8 And, in fact, it didn't get funded.
9 Q. Okay. And just to make this link, although it
10 appears in the document, see the project title for
11 Exhibit 24 says "Randomly Ordered DNA Arrays for SNP
12 Discovery and Typing"? Do you see that?
13 A. Yes, I do.
14 Q. And it has, up in the, sort of, upper
15 right-hand corner, it says HG98-001. Do you see that?
16 A. Yes, I see that.
17 Q. Okay. And so is this -- well, strike that.
18 What would you call this document, Exhibit 24?
19 Is there a name for it?
20 A. It's called a summary statement.
21 Q. Okay. So does this summary statement
22 correspond to the grant application which was Exhibit 23?

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1 A. It does. And I can tell that -- well, I -- I
2 don't recollect submitting another application at that
3 time, but I can also tell that because of the requested
4 dollar amount matches -- matches exactly.
5 Q. Okay. And you're pointing to the [REDACTED]
6 A. That's right.
7 Q. Okay. Which appears on both documents?
8 A. Yes.
9 Q. I am finished with that document.
10 You testified earlier today about the -- at
11 various times today about the brainstorming session.
12 And you testified today that one of the things
13 that came out of the brainstorming session or sessions
14 was how you enable dipping 96 fiber bundles in parallel.
15 Is that accurate?
16 A. Yes.
17 Q. Okay. And you also mentioned at one point --
18 or maybe a couple points, that -- how to do that is not
19 trivial. Do you recall that testimony generally?
20 A. Yes. And not so much the dipping, but part --
21 partly the dipping, but even more so the imaging in the
22 analysis steps afterwards.

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1 Q. What do you mean by that?
2 A. Because -- because these objects -- you know,
3 you can imagine there are tens of thousands of individual
4 fibers that are on -- on the order of sort of
5 micron-to-10-micron scale. So they're very, very tiny,
6 and there are many of them.
7 And what that means is that an imaging system
8 has to be very high resolution, and it -- the technical
9 reasons it has a fairly -- fairly narrow depth of field.
10 So it's very easy to be out of focus.
11 And so the surfaces have to be very flat and
12 they can't be tilted. And when you have to do this
13 across a large area, this microtiter plate, you have to
14 be flat and not tilted across all 96 of these. That
15 turns out to be hard to do.
16 And it took us quite a while to solve that
17 problem satisfactorily. It's much easier to do it for
18 one optical fiber bundle at a time as was being done in
19 David Walt's lab. It's actually challenging to do it for
20 96.
21 And, you know, you can imagine these are --
22 optical fiber bundles are made of glass. They -- they

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1 can break. It's hard to set them all correctly. It's
2 hard to etch the wells of all 96 to the same depth. It's
3 hard to -- you know, to have them be -- be so exquisitely
4 flat.
5 And as far as I know, none of those problems
6 had been addressed or even really, I think, properly
7 thought of before because nobody else had that particular
8 need.
9 Q. Now, you said that it was perhaps not difficult
10 to do for one fiber, but it was quite difficult to do for
11 96 fiber bundles. Why is that?
12 A. I think I would say it's -- it's -- it's not --
13 it's not easy. It's still difficult to do for one.
14 Q. Okay.
15 A. Particularly in a manufacturing setting where,
16 you know, you'd want to make lots of one. It's -- it's
17 extra hard to do for 96.
18 Q. Why is that?
19 A. Because they all have to be in the same plane
20 in relation to each other. So you can imagine, you know,
21 that -- that they all have to -- that -- I think the
22 flatness we achieved, if I remember correctly, was only a

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1 few microns different from one corner of the plate to the
2 other -- the bundle in the other corner of the plate.
3 And so let's say that plate is made of, you
4 know, plastic. Even if it warps just a tiny bit, you'll
5 then start to be out of focus. Even before that when
6 you're setting these bundles in, if you're tilted
7 slightly, you can have issues.
8 So -- so there are multiple stringent
9 requirements such that this is a very high precision
10 part. I don't know if I'm explaining it well, but that
11 makes it hard to manufacture. And that's why we ended up
12 setting the thing -- the things in an aluminum block. It
13 was the only material that we could find at the time that
14 was rigid enough and yet affordable and, you know,
15 machineable and so forth.
16 Q. Uh-huh.
17 A. So we had to literally set these things in a
18 chunk of metal in order to process them and get them
19 suitably flat.
20 Q. You said that it took you quite a while to
21 solve the problem. What are you talking about? A week?
22 A month? How long?

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1 A. Well, we -- with all technologies, you tend to,
2 you know -- you don't go from not having the answer to a
3 perfect manufacturing process.
4 We -- we had -- we evolved, and we sort of made
5 improvements here and there, such that at the very
6 beginning, it was extremely labor-intensive and
7 error-prone to make and use these. And we made very few,
8 and we had a lot of failures.
9 And as we made various improvements, we could,
10 you know, begin to manufacture them to some level of
11 reliability that's 96 and then eventually turn it into
12 such a reliable manufacturing process that we could make
13 and sell these as products.
14 I don't recall the length of time, but I want
15 to say it was -- to get to the end point where this was
16 really solved properly, I want to say it was probably
17 maybe at least a couple of years, I want to say. Wasn't
18 months or weeks.
19 Q. You mentioned that if you had a plastic
20 block -- and by that I -- well, strike that.
21 When you said plastic block, you meant a block
22 that would hold the fibers. Is that what you were

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1 referring to?
2 A. The fiber bundles, that's right.
3 Q. Okay. The fiber bundles. There we go with the
4 vagueness of that word.
5 You mentioned that if you had a plastic block
6 that there could be some warpage, but what would cause
7 that?
8 A. We, in fact, tested various materials,
9 including various types of plastic. And there were
10 issues of warpage instability. I think sensitivity --
11 different sensitivity across the block to temperature.
12 There's some -- probably some stress as -- as these -- as
13 the -- as the block is being processed, as it's being
14 polished.
15 Q. Uh-huh.
16 A. You know, perhaps different absorption of
17 moisture by the plastic. So I'm not sure exactly what.
18 But, again, you might not even see it by eye that that's
19 significant warpage. It might look fine by eye, but at
20 the resolution that we required in terms of microns,
21 there could be significant warpage.
22 Q. You mentioned something about temperature

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1 sensitivity. What is the range of temperatures that the
2 Sentrix array matrix block is subjected to during
3 processing?
4 A. It's a pretty significant range from -- I don't
5 recall exactly, but, generally speaking, it could be as
6 low as perhaps 4 degrees, but we did sometimes store them
7 in the fridge. But certainly from, you know, let's say,
8 room temperature to -- in some cases we would -- you
9 know, we would heat them to -- I can't remember exactly
10 now, but I -- I think it may have been higher than
11 50 degrees centigrade, so it was -- it was not extreme,
12 but it was -- it was a big enough temperature range that
13 it caused significant stress on the, you know, materials
14 in the system.
15 Q. Okay. Did the -- the temperature, the high
16 temperatures, cause any problems with any other aspect of
17 the block other than -- than the potential for warpage?
18 A. Let's see. You know, I think even the
19 stability of the beads in the wells may have been
20 affected by temperature, stability of the -- the surface
21 layer of the beads, the ability of the DNA or other
22 bioactive molecules to be -- to be retained on the

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1 surface without the surface breaking down, the -- the
2 stability of the optical fiber bundle itself.
3 The glass was necessarily fairly soft so that
4 it could be etched. And in some conditions etching could
5 continue, and, you know, that was affected to some extent
6 by temperature.
7 I don't remember now, you know, all the
8 different issues that were to do with temperature, but I
9 think there was more than one, yeah.
10 Q. In the Sentrix array matrix, the fiber bundles
11 are glued to the surface in some way?
12 A. Yes. They were -- they were glued.
13 Q. Okay. Did the high temperature play any role
14 in the adhesive that you had to choose?
15 A. I don't recall at this stage, but I think very
16 likely it did, yes, yes. In fact -- in fact, I think it
17 did, yes. We had to -- yes, we -- we had -- we had
18 fairly specific sort of requirements, and one was that,
19 if I recall, I think that the adhesive had to tolerate a
20 certain temperature range and still function.
21 MR. COSTAKOS: Okay. I have no further
22 questions.

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1 Dr. Chee, thank you for your time.
2 MR. SHULMAN: I have just a few, and very few.
3 ///
4 FURTHER EXAMINATION
5 BY MR. SHULMAN:
6 Q. If you would return to Exhibit 23, please, and
7 turn to the page that ends with 042 in the lower right.
8 And in the third paragraph -- third full paragraph,
9 counsel asked you some questions about that. Do you
10 recall?
11 A. Yes.
12 Q. Okay. And in the first sentence, you wrote,
13 "In addition, there is the potential to parallelize the
14 processing of fibers." Correct?
15 A. Yes.
16 Q. And then you go on to describe that potential
17 in the succeeding sentences of this paragraph. Correct?
18 A. Yes.
19 Q. Okay. Is it correct that in this paragraph you
20 don't mention a microtiter plate?
21 A. I'm just glancing through -- through it
22 quickly. It doesn't look like I mention microtiter

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1 plate.
2 Q. And you don't mention inserting fiberoptic
3 bundles into the wells of a microtiter plate. Correct?
4 A. I think that it's clearly implicit that --
5 because of the 96 number, that's, again, the standard
6 96 plate, that this is -- that what I was describing here
7 is something that would match the throughput of a
8 microtiter plate.
9 Q. Perhaps it's implicit, and I grant you that,
10 but I'm not asking for what's implicit, I'm asking you
11 for what's explicit.
12 A. But I was just about to finish my answer.
13 Q. Sure.
14 A. My answer is that, yes, it doesn't state
15 directly that it would be dipped into a well.
16 Q. Okay. Much less into the well of a microtiter
17 well plate?
18 MR. COSTAKOS: Objection. Form.
19 THE WITNESS: Let me just read it again just to
20 be sure --
21 BY MR. SHULMAN:
22 Q. Sure.

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<p>1 A. -- of what I'm looking at here.</p> <p>2 That's correct. It doesn't talk about dipping</p> <p>3 into a well.</p> <p>4 Q. Okay.</p> <p>5 A. Or 96 bundles.</p> <p>6 Q. Or a microtiter plate?</p> <p>7 A. Or a microtiter plate.</p> <p>8 Q. Now, the title of this grant application is</p> <p>9 "Randomly Ordered DNA Arrays for SNP Discovery and</p> <p>10 Typing"?</p> <p>11 A. Yes.</p> <p>12 Q. Okay. And did you submit amendments or</p> <p>13 correspondence concerning this grant application to</p> <p>14 whoever it is that was responsible for evaluating it?</p> <p>15 A. No.</p> <p>16 Q. Okay.</p> <p>17 A. Not that I can recall.</p> <p>18 Q. All right. I apologize. I don't have more</p> <p>19 than one copy of this, but feel free to look over the</p> <p>20 witness's -- in fact, I may have to also because I don't</p> <p>21 have a copy for myself.</p> <p>22 MR. COSTAKOS: Unless you have really good</p> <p style="text-align: right;">Page 266</p>	<p>1 MR. SHULMAN: Just a few, but that way we can</p> <p>2 all have our own copy.</p> <p>3 MR. COSTAKOS: Okay.</p> <p>4 VIDEOGRAPHER: Off the record at 4:06.</p> <p>5 (Recess.)</p> <p>6 VIDEOGRAPHER: We're on the record at 4:10 p.m.</p> <p>7 BY MR. SHULMAN:</p> <p>8 Q. Before we look at Exhibit --</p> <p>9 MR. COSTAKOS: 25.</p> <p>10 BY MR. SHULMAN:</p> <p>11 Q. -- 25, could we go back for a moment to</p> <p>12 Exhibit 23.</p> <p>13 If you turn, once again, to page 042 in the</p> <p>14 lower right and look at that third full paragraph once --</p> <p>15 one more time. Do you have that before you?</p> <p>16 A. Yes.</p> <p>17 Q. Is it correct that in that third paragraph you</p> <p>18 don't say anything about any type of fixture being used</p> <p>19 to hold fiberoptic bundles?</p> <p>20 A. You know, I -- looking at it now, I -- I</p> <p>21 actually think that I didn't mean this array matrix and</p> <p>22 dipping into wells even though I did not state that</p> <p style="text-align: right;">Page 268</p>
<p>1 eyes.</p> <p>2 MR. SHULMAN: But let me mark as Exhibit --</p> <p>3 MR. COSTAKOS: Exhibit 25 here.</p> <p>4 MR. SHULMAN: -- 25 a two-page document</p> <p>5 produced by Illumina bearing production Nos. ILL 2965028,</p> <p>6 and it's an email from Mark Chee to Lisa Brooks and Rudy</p> <p>7 Pozzatti with copies to Stuelpnagel and Czarnik entitled</p> <p>8 "Update Regarding Application Entitled Randomly Ordered</p> <p>9 DNA Arrays for SNP Discovery and Typing."</p> <p>10 (Exhibit 25 was marked.)</p> <p>11 BY MR. SHULMAN:</p> <p>12 Q. And if you don't mind me looking over your</p> <p>13 shoulder, we're all going to be on camera.</p> <p>14 A. Sure.</p> <p>15 Q. Please read through it.</p> <p>16 MR. SHULMAN: Unless you can make a copy so it</p> <p>17 would be easier for everybody?</p> <p>18 MR. COSTAKOS: No. Yeah, I'm sure I could.</p> <p>19 MR. SHULMAN: Why don't we go off the record</p> <p>20 for a minute.</p> <p>21 MR. COSTAKOS: Do you have a lot of questions</p> <p>22 about it or --</p> <p style="text-align: right;">Page 267</p>	<p>1 explicitly.</p> <p>2 Q. Can you answer that my question?</p> <p>3 Does the paragraph say anything about a fixture</p> <p>4 being used to hold the bundles?</p> <p>5 MR. COSTAKOS: Objection. Form, argumentative.</p> <p>6 THE WITNESS: It implies a fixture. It says a</p> <p>7 96 fiber system, which -- which means 96 fiber bundle</p> <p>8 system.</p> <p>9 So it implies a fixture because that 96 is a</p> <p>10 very -- I can't think of -- I recognize it's after the</p> <p>11 fact, but I can't think of a 96 fiber system -- and I</p> <p>12 think "system" is a keyword -- that doesn't involve some</p> <p>13 kind of fixture.</p> <p>14 I certainly can point to it today and say it</p> <p>15 was a fixture that matches in a -- you know, a microtiter</p> <p>16 plate, although I think that is implicit, but I think it</p> <p>17 does imply some kind of fixture.</p> <p>18 ///</p> <p>19 BY MR. SHULMAN:</p> <p>20 Q. Okay. Well, I'm not asking for the</p> <p>21 implication. We can all read this and infer or imply</p> <p>22 things from it.</p> <p style="text-align: right;">Page 269</p>

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1 I'm just asking, is there anything in here
2 which tells you you're going to use a -- where you said
3 "I'm going to use a fixture to hold the fibers bundles in
4 place?"
5 MR. COSTAKOS: Objection. Form, asked and
6 answered.
7 THE WITNESS: There's no explicit statement
8 about -- doesn't say, you know, "We are going to use a
9 fixture to hold the fibers in place" -- or "the fiber
10 bundles in place."
11 BY MR. SHULMAN:
12 Q. Okay. And there's nothing in this paragraph
13 which says that the fiber bundles will be arranged and
14 configured with spacing to match the wells of a
15 microtiter -- titer plate. Correct?
16 A. Other than the fact that it says a 96 fiber
17 system.
18 Q. Okay. And so you infer or imply from that that
19 it would match the wells of a microtiter plate. Correct?
20 A. Yes. I think it's -- it's -- yeah. It's long
21 enough back that I can't recollect myself. I couldn't
22 say for sure. But I think my -- what I think is a

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1 straightforward reading of this now is that this is
2 talking about the array matrix, and it's intended to --
3 to mean that it would match a microtiter plate.
4 Q. Maybe, yes, you know, I understand your
5 testimony, but is it correct that in this paragraph you
6 didn't say that the 96 bundles would be arranged in a
7 spacing and in a configuration to match the spacing and
8 configuration of the wells of a microtiter plate?
9 A. That's right. That's not stated explicitly in
10 that paragraph.
11 Q. Okay. Now let's look at Exhibit 24, which is
12 the summary statement that Mr. Costakos marked.
13 And do you see Lisa Brooks up at the top there?
14 A. Yes.
15 Q. And she's with the NIH?
16 A. That's right.
17 Q. So she was one of the officials that was
18 somehow involved in reviewing your application?
19 A. She was involved in -- I think she's probably
20 what's called the program officer.
21 Q. Okay.
22 A. So she's not involved in reviewing the

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1 application. She's involved in managing the --
2 Q. The process?
3 A. Overseeing the process, yeah.
4 Q. But she's an official to whom you're applying
5 for this grant --
6 A. Yeah.
7 Q. -- so to speak?
8 A. So -- yes. And I think I mentioned there's a
9 two-stage review. There's a scientific review, and the
10 reviewers involved in that are actually listed at the
11 back.
12 Q. Yes, I notice that.
13 A. So those are the reviewers.
14 Q. Do you know somebody by the name of Rudy
15 Pozzatti?
16 A. Yes. He's also an administrative --
17 administrator at NIH like Lisa Brooks.
18 Q. All right. Now, if we could look at
19 Exhibit 25, this is an email from you to Lisa Brooks and
20 Rudy Pozzatti with a CC to Mr. Stuelpnagel and
21 Mr. Czarnik. Correct?
22 A. Yes.

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1 Q. And this concerns an update to the grant
2 application that is Exhibit 23. Correct?
3 A. Yes, that's right.
4 MR. SHULMAN: Okay. And before we get to the
5 substance of this, let me mark as Exhibit 26 another
6 document which has the meta data for -- that was produced
7 by Illumina for Exhibit --
8 MR. COSTAKOS: Could I have a copy?
9 MR. SHULMAN: Yeah, sorry.
10 MR. COSTAKOS: No, that's all right.
11 MR. SHULMAN: -- for Exhibit 25.
12 (Exhibit 26 was marked.)
13 BY MR. SHULMAN:
14 Q. And do you see that it says the beginning of
15 the document is 2965028?
16 A. Yes.
17 Q. And that's the first page of Exhibit 25.
18 Correct?
19 A. Yes.
20 Q. And the end of the document is 2965029,
21 according to Exhibit 26. Do you see that?
22 A. Yes.

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<p>1 Q. And that's the second and final page of</p> <p>2 Exhibit 25. Correct?</p> <p>3 A. Yes.</p> <p>4 Q. Okay.</p> <p>5 A. So it seems, yeah.</p> <p>6 Q. Then according to the meta data produced by</p> <p>7 Illumina for Exhibit 25, it says that the author of</p> <p>8 Exhibit 25 is you. Right?</p> <p>9 A. Yes.</p> <p>10 Q. Okay. And it says that it was sent by you to</p> <p>11 Lisa Brooks, Rudy Pozzatti with CCs to Stuelpnagel and</p> <p>12 Czarnik. Right?</p> <p>13 A. Yes.</p> <p>14 MR. COSTAKOS: Wait, wait, hold on. I don't</p> <p>15 think that's what the meta data says. I don't know if</p> <p>16 he's in the position to speak to the meta data.</p> <p>17 MR. SHULMAN: Well --</p> <p>18 MR. COSTAKOS: It says that those are the --</p> <p>19 the recipients that are designated on the email. There's</p> <p>20 no question about it.</p> <p>21 MR. SHULMAN: That's all I meant to say.</p> <p>22 MR. COSTAKOS: Whether it was actually sent or</p> <p style="text-align: right;">Page 274</p>	<p>1 the subject is "Update." Right?</p> <p>2 A. That's right, yes.</p> <p>3 Q. Okay.</p> <p>4 A. And I don't know where this meta data is</p> <p>5 derived from. I assume it's just extracted from the</p> <p>6 email. Does it have some other source?</p> <p>7 Q. This is what they produced. I'm just reading</p> <p>8 to you what they gave to us.</p> <p>9 A. Okay. I mean -- okay.</p> <p>10 Q. And then under "Link" it says</p> <p>11 "D:\Production006\VOL02\TEXT007\ILL2965028.txt." Do you</p> <p>12 see that?</p> <p>13 A. I see that.</p> <p>14 Q. And "Filename," it says "to Brooks update,"</p> <p>15 July 10, 1998. Do you see that?</p> <p>16 A. 7/10/98, yes.</p> <p>17 Q. Okay. Now, let's go back to Exhibit 25, which</p> <p>18 Exhibit 26 tells us is "to Brooks update" from July 10 of</p> <p>19 '98.</p> <p>20 In the Exhibit 25 email, you wrote that you had</p> <p>21 made considerable progress both on putting together the</p> <p>22 company and on your SNP genotyping system since you</p> <p style="text-align: right;">Page 276</p>
<p>1 not is a different issue.</p> <p>2 BY MR. SHULMAN:</p> <p>3 Q. Okay. But it says that this email was directed</p> <p>4 to --</p> <p>5 MR. COSTAKOS: There we go.</p> <p>6 BY MR. SHULMAN:</p> <p>7 Q. -- Lisa Brooks, Rudy Pozzatti, with CCs --</p> <p>8 A. Yeah.</p> <p>9 Q. -- to Stuelpnagel and Czarnik.</p> <p>10 A. And one thing I think is weird about this email</p> <p>11 is I don't see the "sent." I was just wondering why that</p> <p>12 was. I don't see a -- "from" -- "sent" is blank.</p> <p>13 Q. Okay. We're going to get to that in a moment.</p> <p>14 A. Okay.</p> <p>15 Q. But do you see that according to the meta data</p> <p>16 this was directed to Brooks and Pozzatti with copies to</p> <p>17 Stuelpnagel and Czarnik?</p> <p>18 A. Yes.</p> <p>19 Q. Okay. And the subject of the email, according</p> <p>20 to the meta data, was "Update." Right?</p> <p>21 A. That's right.</p> <p>22 Q. And according to the email itself, Exhibit 25,</p> <p style="text-align: right;">Page 275</p>	<p>1 submitted the grant application. Do you see that?</p> <p>2 A. Yes.</p> <p>3 Q. And you submitted the grant application back in</p> <p>4 May, right, of '98?</p> <p>5 A. I'm pretty sure that's the case, yeah.</p> <p>6 Q. So this is written after May. Correct?</p> <p>7 A. Yes.</p> <p>8 Q. Okay. And you say you just received an email</p> <p>9 from Rudy indicating that the review panel had already</p> <p>10 met, but you wanted to give them an update anyway. Do</p> <p>11 you see that?</p> <p>12 A. Well, just to clarify, because you asked me a</p> <p>13 question earlier if I gave an update to the reviewers,</p> <p>14 and so clearly this is not an update to the reviewers</p> <p>15 because, in general, you know, you -- so basically you</p> <p>16 can't communicate directly to the reviewers anyway, so</p> <p>17 this is an update to the administrators, yes.</p> <p>18 Q. I understand. I didn't mean to suggest</p> <p>19 otherwise.</p> <p>20 A. Okay.</p> <p>21 Q. And you went on to say, "We are building an</p> <p>22 analytical system to complement our proposal that will</p> <p style="text-align: right;">Page 277</p>

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<p>1 allow approximately 3 million genotypes to be determined</p> <p>2 in a single assay cycle in a device the size of a</p> <p>3 standard microtiter plate (more below)." Do you see</p> <p>4 that?</p> <p>5 A. Yes, I see that.</p> <p>6 Q. Okay. And then in the next paragraph you</p> <p>7 describe some errors that you had detected in the</p> <p>8 proposal. Correct?</p> <p>9 A. Yes.</p> <p>10 Q. Okay. And those errors don't have anything to</p> <p>11 do with microtiter plates. Correct?</p> <p>12 A. I'd have to look, but it doesn't seem so.</p> <p>13 Q. I don't think it does.</p> <p>14 A. Yeah. It says genotyping accuracy.</p> <p>15 Q. And then the actual update is set forth at the</p> <p>16 beginning -- beginning at the bottom third, roughly, of</p> <p>17 this email. Correct?</p> <p>18 A. Yes.</p> <p>19 Q. Okay. And the update stated that on the</p> <p>20 multi-fiber array, one of the main areas of progress has</p> <p>21 been in the design and engineering of the platform on</p> <p>22 which the SNP genotyping proposal is based. Correct?</p> <p style="text-align: right;">Page 278</p>	<p>1 Corning that we saw on the March 9 email?</p> <p>2 MR. COSTAKOS: Objection. Foundation.</p> <p>3 THE WITNESS: Oh. So I don't know, but I'm --</p> <p>4 I -- I think it's quite possible that that was a</p> <p>5 particular instance of a 1536 design, but I think the</p> <p>6 concept of doing things in 1536 format -- we'd have to</p> <p>7 check this separately --</p> <p>8 BY MR. SHULMAN:</p> <p>9 Q. Sure.</p> <p>10 A. -- but I think it was probably around before</p> <p>11 that.</p> <p>12 Q. Okay. And the -- it says the fiber array will</p> <p>13 mate with a 1536-well microtiter plate?</p> <p>14 A. Yes.</p> <p>15 Q. Okay. And that information about arranging</p> <p>16 fibers in a matrix or fiber bundles, rather, in a matrix</p> <p>17 so that they mate with a microtiter plate is expressly</p> <p>18 set forth in this update. Correct?</p> <p>19 A. It is, yes.</p> <p>20 Q. And it's not in the May 6 grant application?</p> <p>21 A. That's right. I think it was implicit in the</p> <p>22 application and explicit here.</p> <p style="text-align: right;">Page 280</p>
<p>1 A. Yes.</p> <p>2 Q. And you stated also that we've just completed</p> <p>3 the initial design specs of a multi-fiber processing and</p> <p>4 reading system that is scheduled to be available for SNP</p> <p>5 genotyping by the end of year two of your proposed</p> <p>6 project. Correct?</p> <p>7 A. Yes.</p> <p>8 Q. Then in the next paragraph, you stated that the</p> <p>9 multi-fiber plate will have up to 1536 fibers arrayed in</p> <p>10 a matrix with the spacing of a standard 1536-well</p> <p>11 microtiter plate. Correct?</p> <p>12 A. Yes.</p> <p>13 Q. Actually, microtiter plates of the 1536 variety</p> <p>14 were not standard at that time, were they?</p> <p>15 MR. COSTAKOS: Objection. Form.</p> <p>16 THE WITNESS: Depends what you mean by</p> <p>17 standard. I think -- I think they were. I mean, there</p> <p>18 was -- by standard, I mean that there was sort of a</p> <p>19 defined spacing, if you will, just not a defined format.</p> <p>20 BY MR. SHULMAN:</p> <p>21 Q. Well, hadn't the 1536 microtiter plate just</p> <p>22 been developed by Pharmacopeia in combination with</p> <p style="text-align: right;">Page 279</p>	<p>1 Q. Well, in the application, you didn't mention</p> <p>2 anything about 1536 fibers. Right?</p> <p>3 A. Oh, no. Microtiter plate.</p> <p>4 Q. Okay. Had you ever seen a 1536 microtiter</p> <p>5 plate -- 1536-well microtiter plate as of July 10, 1998?</p> <p>6 A. I don't recall, but I think I -- yeah, I -- I'm</p> <p>7 not sure.</p> <p>8 I -- I have a -- I have a vague recollection</p> <p>9 that I might have seen a 1536 format used in PCR at -- at</p> <p>10 the Whitehead Institute prior to this date, but I'm not</p> <p>11 sure. Again, with the dates being that far back, I'm not</p> <p>12 sure whether that's absolutely correct, whether I saw</p> <p>13 that before or after, so...</p> <p>14 Q. Okay. The Series A financing for Illumina was</p> <p>15 closed sometime in June of '98. Is that correct?</p> <p>16 A. I don't recall exactly. I think that might</p> <p>17 have been right. About that time, but I wouldn't recall.</p> <p>18 Q. I'll represent to you that I read somewhere in</p> <p>19 the record that it was sometime in June, although I can't</p> <p>20 recall exactly when.</p> <p>21 A. Okay.</p> <p>22 Q. I think it was June 15, but don't hold me to</p> <p style="text-align: right;">Page 281</p>

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<p>1 that date, but it was definitely June. 2 (Telephone rings.) 3 MR. SHULMAN: Oops. Sorry. 4 MR. COSTAKOS: Last time it was a dog barking, 5 I think. 6 MR. SHULMAN: Right. That's when it rings. 7 MR. COSTAKOS: That's your ring, okay. 8 BY MR. SHULMAN: 9 Q. If you look at the last page of Exhibit 25, the 10 very last paragraph, you wrote that "the company has 11 closed its Series A financing and now has the backing and 12 support of three highly experienced and successful 13 venture capital firms." Do you see that? 14 A. Yes. 15 Q. So that means that this document must have been 16 written after the Series A financing was completed. 17 Correct? 18 A. It looks to be so or very close to that time, I 19 would say. It could have been written in anticipation of 20 it closing and not -- not with the intention to send it 21 prior to the closing. 22 Q. Okay. And according to the meta data, it at Page 282</p>	<p>1 BY MR. SHULMAN: 2 Q. So if the brainstorming session took place in 3 early summer of 1998, that would be consistent with this 4 update that you wrote in the first week of July of 1998. 5 Correct? 6 MR. COSTAKOS: Objection. Form, foundation 7 THE WITNESS: Very -- very much so, I think. 8 BY MR. SHULMAN: 9 Q. Okay. 10 A. That I think it's -- as I look at this, it's 11 sort of -- again, I don't have enough of a recollection 12 to be a hundred percent sure, but -- but all these 13 documents, I think, are most consistent with -- whether 14 it was me or someone else, I don't know -- having the 15 conception of this array matrix format prior to the date 16 of this grant application. 17 And I think in this so-called brainstorming -- 18 I'm not even sure if that's the best name for it -- the 19 brainstorming meeting, that that may well have been more 20 focused on what I talk about here, the design and 21 engineering of the platform, as I mentioned earlier, the 22 specific of how we would make this thing, not necessarily Page 284</p>
<p>1 least suggests that this document came into creation on 2 July 10, 1998. Correct? 3 MR. COSTAKOS: Objection. Competence. 4 THE WITNESS: Hard for me to say. I'm 5 wondering if this may have been from the -- basically, 6 all the files that I sent to Illumina before. And 7 perhaps this was the name of the file -- it says 8 "filename" -- name of the file that I saved it as. 9 So what that likely means is that that's the 10 date I sent it. Could have been written the same day or 11 possibly a little bit before. 12 BY MR. SHULMAN: 13 Q. Okay. But it suggests that at least this email 14 was prepared sometime in the first week of July of '98? 15 A. That's what it suggests. 16 Q. Okay. Which is consistent with the Series A 17 financing having already closed. Correct? 18 MR. COSTAKOS: Objection. Form. 19 THE WITNESS: Seems consistent with that -- 20 MR. SHULMAN: Okay. 21 THE WITNESS: -- even though I don't recollect 22 exactly when that closed. Page 283</p>	<p>1 the initial concept, but more, you know, Would we make it 2 this way? Would we make it that way? How would we use 3 it as a system? How many fibers should be in a bundle? 4 How many different assays would be done? That type of 5 thing. May have been more -- yeah, I don't recollect 6 this, but I think it may well have been more of a 7 technical elucidation of a concept that already existed. 8 Q. Okay. Do you recall how the -- if you look 9 once again at page 042 of Exhibit 23, looking at that 10 third paragraph that begins "in addition," do you recall 11 how the ideas expressed -- or when the ideas expressed in 12 that first paragraph were first thought of? 13 A. I wish I did. I really wish I did at this 14 time. It's becoming very interesting to me now. I'm -- 15 but I don't. 16 I'm thinking -- I'm thinking that one way or 17 another they were in existence before the meeting that 18 John Stuelpnagel is referring to. And -- and I honestly 19 couldn't say -- I have no idea at this stage whether, you 20 know, I came up with that idea perhaps even when I was 21 writing the grant. I often do things like that or -- 22 Q. You say you can't say that happened? Page 285</p>

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<p>1 A. Yeah, I can't say. That could have happened.</p> <p>2 We could have had a prior discussion and come up with it,</p> <p>3 or someone else, John Stuelpnagel, could have. Someone</p> <p>4 else could have communicated it to me. I honestly can't</p> <p>5 recall at this time.</p> <p>6 Q. Okay. I know lots of things could be, but is</p> <p>7 it fair to say that you don't recall what the source was</p> <p>8 of the ideas that are expressed in the third paragraph --</p> <p>9 third full paragraph on page 042 of Exhibit 23?</p> <p>10 MR. COSTAKOS: Objection. Form.</p> <p>11 THE WITNESS: That's fair to say. I -- I feel</p> <p>12 reasonably sure that what's being described there is the</p> <p>13 array matrix, but it's fair to say that I -- I</p> <p>14 couldn't -- I have no recollection on now, you know --</p> <p>15 just don't remember any specific discussion where that</p> <p>16 was first described.</p> <p>17 BY MR. SHULMAN:</p> <p>18 Q. Okay. And you said that you wrote this grant</p> <p>19 application within the month of May. Correct?</p> <p>20 MR. COSTAKOS: Objection. Mischaracterizes.</p> <p>21 THE WITNESS: No, no. What I said was that I</p> <p>22 don't recall exactly when I wrote it, but it probably</p> <p style="text-align: right;">Page 286</p>	<p>1 BY MR. SHULMAN:</p> <p>2 Q. Okay. And do you know whether or not the</p> <p>3 source of the ideas expressed on page 042 came from the</p> <p>4 March 9 email that we've spent all too much time on</p> <p>5 today?</p> <p>6 MR. COSTAKOS: Objection. Form.</p> <p>7 THE WITNESS: You know, I don't know. I don't</p> <p>8 know. I -- I think from the date of the email, it's on</p> <p>9 its -- it's certainly possible, but I -- I don't.</p> <p>10 MR. SHULMAN: I have no further questions.</p> <p>11 Thank you so much for your time.</p> <p>12 MR. COSTAKOS: I have no questions.</p> <p>13 THE WITNESS: You're welcome.</p> <p>14 VIDEOGRAPHER: This is the end of disk No. 3 of</p> <p>15 Volume I and concludes the deposition. We're off the</p> <p>16 record at 4:33 p m.</p> <p>17 (Discussion off the record.)</p> <p>18 MR. COSTAKOS: I want to reserve the right to</p> <p>19 read and sign, and mark the transcript as attorneys' eyes</p> <p>20 only pending whatever review we do once we get the</p> <p>21 transcript for dedesignation purposes.</p> <p>22 MR. SHULMAN: Yeah, that's what I was going to</p> <p style="text-align: right;">Page 288</p>
<p>1 would have been -- it would have been almost certainly</p> <p>2 sometime in the one-month period prior to the submission</p> <p>3 date.</p> <p>4 BY MR. SHULMAN:</p> <p>5 Q. Okay. So sometime between April 6 and May 6?</p> <p>6 A. Yes. It's possible it was earlier. I tend to</p> <p>7 write more towards the deadline; so it's -- it's most</p> <p>8 likely in that last month.</p> <p>9 Q. Surely after March 9, 1998?</p> <p>10 MR. COSTAKOS: Objection. Form, foundation</p> <p>11 THE WITNESS: Was March -- March 9, 1998.</p> <p>12 BY MR. SHULMAN:</p> <p>13 Q. No. I'm just saying, you wrote it after</p> <p>14 March 9, 1998?</p> <p>15 MR. COSTAKOS: Same objections.</p> <p>16 THE WITNESS: I think it's -- it's very, very</p> <p>17 likely I started writing this in April, but I could not</p> <p>18 say for sure when I started writing this.</p> <p>19 I'd be -- I'd be moderately surprised if I was</p> <p>20 writing this at the beginning of March, but -- but I</p> <p>21 wouldn't be shocked.</p> <p>22 ///</p> <p style="text-align: right;">Page 287</p>	<p>1 request also about Stuelpnagel's testimony, as well as</p> <p>2 his today. I mean, once you get the transcript and look</p> <p>3 at it, and you can figure out what's truly confidential</p> <p>4 and what isn't.</p> <p>5 MR. COSTAKOS: I'll keep this on the record,</p> <p>6 but most of the documents you marked, including all the</p> <p>7 emails, you guys marked as attorneys' eyes only.</p> <p>8 MR. SHULMAN: Yeah, but we dedesignated them in</p> <p>9 response to your request.</p> <p>10 MR. COSTAKOS: But you only dedesignated them</p> <p>11 as it relates to Illumina employees. So I think what you</p> <p>12 said was we could show Illumina employees, but --</p> <p>13 MR. SHULMAN: Okay. Well, I guess we've waived</p> <p>14 whatever confidentiality we had because --</p> <p>15 MR. COSTAKOS: As it relates to him, that's for</p> <p>16 sure.</p> <p>17 MR. SHULMAN: So -- yeah.</p> <p>18 MR. COSTAKOS: Okay. Let's go ahead and go off</p> <p>19 the record.</p> <p>20 (The deposition concluded at 4:35 p m.)</p> <p>21 * * *</p> <p>22</p> <p style="text-align: right;">Page 289</p>

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<p>1 2 REPORTER'S CERTIFICATE 3 4 I, Veronica S. Thompson, Certified Shorthand 5 Reporter for the State of California, do hereby certify: 6 That the witness named in the foregoing 7 deposition was by me duly sworn; that the deposition was 8 then taken before me at the time and place herein set 9 forth; that the testimony and proceedings were reported 10 stenographically by me and were transcribed through 11 computerized transcription by me; that the foregoing is a 12 true record of the testimony and proceedings taken at 13 that time; and that I am not interested in the event of 14 the action. 15 Witness my hand dated July 26, 2010. 16 17 18 19 _____ 20 Veronica S. Thompson 21 CSR 6056, RPR, CRR 22</p> <p style="text-align: right;">Page 290</p>	<p>1 Digital Evidence Group, L.L.C. 2 1299 Pennsylvania Ave, Northwest, Suite 1130E 3 Washington, D.C. 20004 4 (202) 232-0646 5 6 SIGNATURE PAGE 7 8 Case Name: Illumina v. Affymetrix 9 Witness Name: Mark Chee 10 Deposition Date: 07/23/10 11 I do hereby acknowledge that I have read 12 and examined the foregoing pages 13 of the transcript of my deposition and that: 14 (Check appropriate box): 15 () The same is a true, correct and 16 complete transcription of the answers given by 17 me to the questions therein recorded. 18 () Except for the changes noted in the 19 attached Errata Sheet, the same is a true, 20 correct and complete transcription of the 21 answers given by me to the questions therein 22 recorded.</p> <p>DATE _____ WITNESS SIGNATURE _____</p> <p style="text-align: right;">Page 292</p>
<p>1 Mark Chee c/o 2 Foley & Lardner 3 777 East Wisconsin Avenue 4 Milwaukee, Wisconsin 53202-5306 5 Case: Illumina v. Affymetrix 6 Date of deposition: 07/23/10 7 Deponent: Mark Chee 8 Please be advised that the transcript in the above 9 referenced matter is now complete and ready for signature. 10 The deponent may come to this office to sign the transcript, 11 a copy may be purchased for the witness to review and sign, 12 or the deponent and/or counsel may waive the option of signing. 13 Please advise us of the option selected. 14 Please forward the errata sheet and the original signed 15 signature page to counsel noticing the deposition, noting the applicable 16 time period allowed for such by the governing Rules of Procedure. 17 If you have any questions, please do not hesitate to call our office at 18 (202)-232-0646. 19 Sincerely, 20 21 Digital Evidence Group 22 Copyright 2009 Digital Evidence Group Copying is forbidden, including electronically, absent express written consent</p> <p style="text-align: right;">Page 291</p>	<p>1 Digital Evidence Group, L.L.C. 2 1299 Pennsylvania Ave, Northwest, Suite 1130E 3 Washington, D.C. 20004 4 (202) 232-0646 5 6 ERRATA SHEET 7 8 Case Name: Illumina v. Affymetrix - 9 Witness Name: Mark Chee 10 Deposition Date: 07/23/10 11 Page No. Line No. Change 12 13 14 15 16 17 18 19 20 21 22</p> <p>Signature _____ Date _____</p> <p style="text-align: right;">Page 293</p>

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